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Contributors to This Number

HENRY H. ARMSBY is Field Co-ordinator, Engineering, Science, and Management War Training, U. S. Office of Education. He was formerly Registrar and Student Adviser, Missouri School of Mines, and from 1938 to 1941 was Treasurer of the A.A.C.R.

•

HENRY G. BADGER is Associate Specialist in Educational Statistics, United States Office of Education.

•

ROBERT OSBORNE BAKER is Bursar and Assistant Professor at the University of Kansas City.

•

LOUISE S. COBB is in the Department of Physical Education at the University of California at Berkeley. She has recently served as President both of the California Association and of the Southwest District of the American Association for Health, Physical Education and Recreation.

•

GLENN W. DURFLINGER is Assistant Professor of Education of Santa Barbara (California) State College.

•

BENJAMIN W. FRAZIER is Senior Specialist in Teacher Training, United States Office of Education.

•

WALTER S. GUILER is Professor of Education in Miami University. He has been a frequent contributor to the JOURNAL.

•

DON E. HALL is an editorial and feature writer of St. Cloud, Minnesota.

•

WILLIAM S. HOFFMAN is Registrar of Pennsylvania State College. He has served as Editor of the JOURNAL and President of the A.A.C.R.

•

RAINARD B. ROBBINS is Vice President and Secretary of the Teachers Insurance and Annuity Association of America. In this capacity he has been interested for many years in the improvement of college plans for retirement income and in the funding of such plans.

•

CARMILLE RUSH is Assistant Professor of Mathematics in the School of Education, Miami University.

•

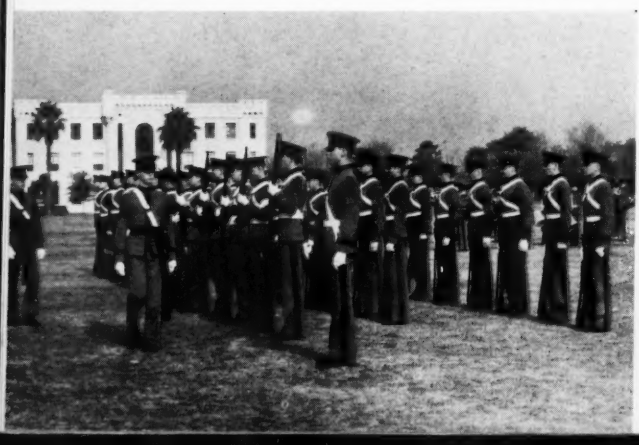
LAURENCE HERVEY SKINNER is Professor of Romanic Languages in Miami University. He is the author of numerous widely-used textbooks in French.

THE CITADEL, at Charleston, South Carolina, which last session celebrated its centennial, is one of a few institutions of similar type in the United States, if not in the world.

Replacing state soldiers organized as guard companies to care for arms and munitions in the state arsenals, the original cadets entered upon a curriculum and a scheme of training designed to fit them for leadership in peace and war alike. The first curriculum, which was altered little until 1903, when senior-year elective courses were first instituted, survives in part today, when there are eleven fields of concentration open to cadets; their requirements are still largely military, and include four years of military science, as well as mathematics, chemistry, physics, English, and history.

Citadel men have participated fully in all the wars since 1843. In the War Between the States the Cadet Corps itself as a body of State troops took part in eight operations against the Federal soldiers; and of the 240 graduates through 1864, some 200 were officers in the armed forces of the Confederacy. Seven cadets and forty-three graduates gave their lives in that conflict, as did many ex-cadets. In World War I about half the living graduates served in the United States forces, and at present an estimated 65 per cent are officers.

The enrollment reached a high of 1980 in 1942-43, but the inevitable war-time reduction has taken its toll, and at present the cadet corps is reduced to about a fourth of its normal strength. It is now housed in one of the four barracks buildings. The other three are occupied by soldiers of a basic engineering unit, and a large STAR unit.



Above: Cadet artillerists, operating an anti-aircraft gun, are inspected.

Left: Formal guard-mounting, in dress uniform, is a traditional ceremony at The Citadel.

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Effects of the War Upon College Personnel*

HENRY G. BADGER AND BENJAMIN W. FRAZIER

ALTHOUGH approximately 10 per cent of the population of the United States 25 years of age and over have attended college, wartime demands for additional college-trained workers of many kinds are pressing. To assist in planning wartime college training programs, the U. S. Office of Education secured data as of October 15, 1942, from 1,060, or 61.7 per cent, of the institutions of higher education in the United States on significant changes in student enrollments, on the number and composition of staffs, and on college financing. Reports were received from every State and from institutions of every major type.

CHANGES IN THE NUMBER OF STAFF MEMBERS

The total number of full-time and part-time staff members in all types of institutions of higher education, estimated to be approximately 125,000 as of October 15, 1942, decreased 6.7 per cent between October 15, 1941, and October 15, 1942 (table I). During the 1-year period, the number of men teachers decreased 9.5 per cent in contrast to a 1.5 per cent increase in the number of women teachers. The ratio of men to women teachers is now about 2.5 to 1. The decrease in the number of full-time staff members was 5.5 per cent, and of part-time staff members, 11.2 per cent. In 1942, 26.9 per cent of the instructional staff were employed part time. Losses of part-

* This article was issued as Circular No. 217 of the United States Office of Education. Because it was sent to a relatively small mailing-list, and because it was felt to be of general interest warranting its wider distribution, the JOURNAL requested and received permission to reprint it here. [Editor's note]

TABLE I

CHANGES IN INSTRUCTIONAL STAFF OF INSTITUTIONS OF HIGHER EDUCATION OCTOBER 15, 1941 TO OCTOBER 15, 1942 BY TYPE OF INSTITUTION AND BY SEX

Type of Institution	Total Staff				Full-Time Staff				Part-Time Staff			
	Number of institutions reporting	Per cent change			Number of institutions reporting	Per cent change			Number of institutions reporting	Per cent change		
		Total	Men	Women		Total	Men	Women		Total	Men	Women
All institutions	1,004	−6.7	−9.5	+1.5	987	−5.5	−7.8	+2.7	780	−11.2	−13.7	−2.0
Universities, colleges, and professional schools	606	−6.6	−9.1	+2.6	603	−4.6	−7.0	+3.9	522	−11.6	−13.8	−1.6
Teachers colleges	134	−5.9	−9.9	−1.8	134	−5.2	−8.9	−1.3	81	−13.7	−24.1	−6.4
Normal schools	19	−2.3	−7.7	+2.5	18	−2.9	−6.0	+1.6	12	*	*	*
Junior colleges	245	−8.0	−14.8	+1.4	232	−9.0	−17.0	+2.9	165	−5.5	−8.5	−2.3
Publicly controlled institutions	359	−8.1	−11.7	+1.6	348	−5.7	−8.8	+2.1	253	−16.2	−20.8	−0.7
Universities, colleges and professional schools	99	−8.5	−11.7	+6.0	99	−4.9	−7.8	+7.5	85	−18.4	−22.2	+0.9
Teachers colleges	127	−5.9	−9.9	−1.8	127	−5.2	−8.8	−1.4	77	−13.9	−4.9	−5.9
Normal schools	10	−5.7	−11.4	−1.0	10	−5.9	−11.7	−1.1	4	0.0	0.0	0.0
Junior colleges	123	−10.5	−14.4	−3.3	112	−13.1	−17.3	−4.8	87	*	*	*
Privately controlled institutions	695	−5.6	−7.9	+1.5	639	−4.1	−6.8	+3.1	527	−8.6	−10.0	−2.9
Universities, colleges, and professional schools	507	−5.6	−7.6	+0.9	504	−4.2	−6.4	+2.2	437	−8.6	−10.0	−2.6
Teachers colleges	7	−5.7	−9.8	−2.2	7	−5.1	−10.6	0.0	4	*	*	*
Normal schools	9	+2.4	−3.2	+8.2	8	+7.0	+4.8	+10.0	8	*	*	*
Junior colleges	122	−4.4	−15.5	+6.2	120	−3.0	−16.5	+10.0	78	−8.7	−12.5	−5.2

* Per cent not computed because of small number of cases.

TABLE II

PER CENT OF 1942–43 INSTRUCTIONAL STAFF IN 987 INSTITUTIONS OF HIGHER EDUCATION WHO WERE NOT AT SAME INSTITUTIONS IN 1941–42, BY TYPE OF INSTITUTION AND BY SEX

Type of Institution	Number of Institutions Reporting	Per Cent New Members Constituted of 1942–43 Staff					
		Full-time			Part-time		
		Total	Men	Women	Total	Men	Women
All institutions	987	12.2	10.9	15.2	18.0	16.1	24.3
Universities, colleges, and professional schools	603	12.2	10.9	16.1	17.8	15.8	25.7
Teachers colleges	134	8.3	7.7	9.0	19.1	20.3	18.3
Normal schools	18	16.0	9.0	25.2	*	*	*
Junior colleges	232	18.2	15.5	21.4	20.6	20.6	20.9
Publicly controlled institutions	348	12.1	11.5	13.7	20.2	17.3	27.8
Universities, colleges, and professional schools	99	13.3	12.1	17.8	20.9	17.2	34.9
Teachers colleges	127	8.4	7.9	9.0	16.8	19.6	15.1
Normal schools	10	18.0	*	*	*	*	*
Junior colleges	112	13.8	14.1	13.1	18.3	17.6	19.2
Privately controlled institutions	639	12.2	10.4	16.7	17.0	15.5	22.2
Universities, colleges, and professional schools	504	11.5	10.1	15.2	16.6	15.2	21.9
Teachers colleges	7	4.9	*	8.1	*	*	*
Normal schools	8	*	*	*	*	*	*
Junior colleges	120	23.8	18.1	28.0	24.7	26.3	23.2

* Per cent not computed because of small number of cases.

time students were greater than those of full-time students; and the institutions tended to dispense with or lose the services of part-time teachers to a greater extent than was the case with regular or full-time instructors.

The greatest decreases proportionally in the number of full-time teachers were in the junior colleges, followed in order by the teachers colleges, by universities, colleges, and professional schools, and by normal schools. The publicly supported junior colleges were especially heavy losers. Most of the 39 institutions of higher education that closed or merged with other institutions last year were junior colleges, which partially accounts for the sharp decline in instructional staff.

New staff members.—The estimated number of new staff members in institutions of higher education in October 1942 was nearly

TABLE III

UNFILLED POSITIONS IN 287 INSTITUTIONS OF HIGHER EDUCATION,[a] OCTOBER 15, 1942, BY FIELD OR SUBJECT AND BY TYPE OF INSTITUTION

Item	Number of Institutions Reporting		Number of Unfilled Positions		
	On last year's positions	On new positions	Total	Last year's positions	New positions
Field or subject:					
Total	230[b]	74[b]	1,660	1,463	197
Chemistry	58	12	87	71	16
Dentistry	5	3	27	13	14
Economics	54	6	93	86	7
Engineering	43	10	135	108	27
Home economics	13	4	21	16	5
Mathematics	40	14	57	42	15
Medicine	14	4	575	558	17
Nursing	9	5	21	14	7
Pharmacy	7	2	13	11	2
Physical education for men	44	10	70	59	11
Physics	45	15	84	64	20
Psychology	33	5	42	37	5
Other	145	28	435	384	51
Type of institution:					
Total	230[b]	74[b]	1,660	1,463	197
Publicly controlled institutions	108	21	787	736	51
Universities, colleges, and professional schools	59	14	665	628	37
Teachers colleges	30	1	71	70	1
Normal schools	4	1	7	5	2
Junior colleges	15	5	44	33	11
Privately controlled institutions	122	53	873	727	146
Universities, colleges, and professional schools	99	45	801	676	126
Junior colleges	23	8	72	51	21

[a] Of 1,060 institutions reporting, 287 had unfilled positions as of October 15, 1942.
[b] A total of 17 institutions reported unfilled positions among both last year's positions and new positions.

11,000 full-time and nearly 5,500 part-time teachers. The new full-time staff members constituted 12.2 per cent of the total number of full-time teachers, and the new part-time teachers constituted 18.0 per cent of the total part-time staffs (table II). The highest percentages of new teachers were in the junior colleges and normal schools, where average salaries are lower and staff members typically are a little younger than in the 4-year colleges and the universities.

TABLE IV

INSTRUCTIONAL STAFF MEMBERS LEAVING 800 INSTITUTIONS OF HIGHER EDUCATION BETWEEN THE END OF THE SESSION, 1941–42, AND OCTOBER 15, 1942, BY FIELD OR SUBJECT AND BY REASON FOR LEAVING

Field or Subject	Total Staff Members Leaving		Reason for Leaving					
	Number	Per cent	Retired or died	Entered armed forces	Entered Federal Government	Entered war industry	Entered other work	Other reasons
Total.....	9,655	100.0	4.2	46.7	10.0	6.7	17.0	15.4
Chemistry ...	497	100.0	2.8	23.3	13.5	31.0	20.3	9.1
Dentistry....	81	100.0	2.5	85.2	—	—	—	12.3
Economics....	556	100.0	2.5	28.4	37.1	5.6	18.0	8.4
Engineering ..	515	100.0	4.5	29.1	11.0	24.3	23.1	8.0
Home economics.....	177	100.0	5.7	2.8	7.3	4.5	45.2	34.5
Mathematics..	362	100.0	6.4	40.1	12.1	9.7	21.5	10.2
Medicine.....	1,610	100.0	2.4	90.2	0.5	0.6	2.5	3.7
Nursing.....	172	100.0	—	55.2	2.9	1.7	25.6	14.6
Pharmacy.....	89	100.0	3.4	61.8	4.5	3.4	11.2	15.7
Physical education for men	435	100.0	1.1	69.7	1.4	5.3	13.3	9.2
Physics.....	342	100.0	1.2	20.8	32.4	15.2	18.1	12.3
Psychology...	239	100.0	5.0	45.6	15.1	3.8	18.0	12.5
Other.....	4,580	100.0	5.5	38.8	8.9	4.3	19.8	22.7

Unfilled positions.—Of the 1,060 institutions reporting on October 15, 1942, 287 still had 1,660 unfilled positions. Of these vacancies, 1,463 were in positions in existence the preceding year and 197 were in new positions (table III).

Most of the fields in which vacancies exist are directly associated with the war effort. The 7 fields leading all others in number of vacancies were: Medicine, 575; engineering, 135; economics, 93; chemistry, 87; physics, 84; physical education for men, 70; and mathematics, 57. Smaller numbers of vacancies were reported for many other subjects.

Reasons for staff members leaving.—The most frequently mentioned reason for instructional staff leaving the various institutions was entrance into the armed forces (46.7 per cent of those leaving). Considerably more than half of the men teachers left for this cause. Thereafter, in descending order of frequency, the reasons were: Entered work other than war industry or Federal Government, entered employment in the Federal Government, entered war industry, retired or died, and others (table IV).

Reasons for leaving varied widely among the different fields. The

TABLE V

MEASURES TAKEN TO PREVENT OR MEET SHORTAGES IN INSTRUCTIONAL STAFF BY 801 INSTITUTIONS OF HIGHER EDUCATION

Measure	Number and Per Cent of Institutions Using Measure				
	Total	Publicly controlled		Privately controlled	
		Number	Per cent	Number	Per cent
Number of institutions reporting	801	285	—	516	—
Increasing hours of teaching	515	174	61.1	341	66.1
Discontinuing courses	405	144	50.5	261	50.6
Replacing men with women	311	132	46.3	179	34.7
Obtaining deferment of men	295	104	36.5	191	37.0
Increasing salaries	291	118	41.4	173	33.5
Retention of staff members beyond retirement age	201	46	16.1	155	30.0
Using graduate assistants	147	49	17.2	98	19.0
Discontinuing nonteaching activities	96	34	11.9	62	12.0
Reducing academic qualifications for position	80	40	14.0	40	7.8
Recalling of retired instructors	67	26	9.1	41	7.9
Pooling of instructional work with other institutions	67	10	3.5	57	11.0
Other[a]	29	8	2.8	21	4.1

[a] Includes the following (total number of institutions reporting only): Part-time teaching, 11; increasing size of classes, 5; transferring teachers from one department to a related one, 3; alternating courses, 3; combining courses, 2; pooling instructional work among other instructors, securing professional men to teach single courses, using qualified men to teach their minor fields, using undergraduates, and reducing number of sections, 1 each.

causes for such differences included varying demands of the armed forces for specialists in the different fields; variations in the number of men and women teachers and in the numbers of students in each field; salary differences among noncollege occupations; and others. Most of the college teachers left the institutions voluntarily. Obviously some of the causes for withdrawal will tend to operate with increased strength as the war continues.

Measures taken to prevent or to meet shortages in staff.—The great majority of institutions of higher education reported more than one method of preventing or meeting faculty shortages. Six methods were reported by one-fourth or more of the institutions as follows: Increasing hours of teaching, discontinuing courses, replacing men with women, obtaining deferment of men, increasing salaries, and retention of staff members beyond retirement age (table V).

Faculty members who could be placed on leave status.—Of 1,060 institutions of higher education reporting as of October 15, 1942, 154

TABLE VI

STAFF IN 154 INSTITUTIONS OF HIGHER EDUCATION[a] WHO COULD BE PLACED ON LEAVE STATUS, OCTOBER 15, 1942, BY FIELD OR SUBJECT AND SEX

Field or Subject	Staff Who Could Be Placed on Leave Status		
	Total	Men	Women
Total	843[b]	581	230
Administrative positions	27	15	12
Teaching positions:			
Art	18	11	7
Biology	28	24	4
Ceramics	8	8	—
Chemistry	19	17	2
Commerce	56	36	20
Dentistry	42	39	3
Economics	14	14	—
Education	43	29	14
English	97	56	41
History and social studies	45	39	6
Home economics	14	—	14
Languages, ancient	7	6	1
Languages, modern	36	17	19
Law	7	7	—
Mathematics	13	12	1
Medicine	7	6	1
Music	41	32	9
Physical education	35	24	11
Physics	7	7	—
Political science	10	10	—
Psychology	20	15	5
Religion	17	17	—
Science, natural or unspecified	8	8	—
Sociology	11	9	2
Other:			
Fewer than 7 cases each	28[c]	25	3
Not specified	185[b]	98	55

[a] Of 1,060 institutions reporting, 154 had staff members who could be placed on leave status.

[b] Includes 32 persons whose sex was not specified.

[c] Includes: Philosophy, 6; agriculture, 5; geology, 4; geography and industrial arts, 3 each; engineering and forestry, 2 each; nursing, pharmacy, and philology, 1 each.

could spare 581 men, 230 women, and 32 other teachers whose sex was not stated, a total of 843. In proportion to the total number of teachers involved, there were many more surplus instructors in the teachers colleges and junior colleges than in the group of institutions including universities, colleges, and professional schools.

The 8 fields or subjects which led the rest in number of faculty members who could be placed on leave status were, in descending order: English, commerce, history and social studies, education, ancient and modern languages, dentistry, music, and physical education (table VI). Even in professional and technical subjects in which there are serious shortages, local surpluses were reported by at least a few institutions. The total number of surplus teachers constituted approximately half of the total number of vacancies in the 1,060 institutions reporting on both items. Such conditions indicate a need for more effective interinstitutional and interdepartmental teacher placement, transfer, and retraining facilities.

Interdepartmental transfer and retraining of teachers.—Some colleges and universities, in order to solve the dual problem of meeting teacher shortages in some departments and caring for surplus staff members in others, have made special inquiries of their staff members now teaching in surplus fields to discover those who have the ability and willingness to teach in shortage fields, such as mathematics, physics, chemistry, and various other specialized subjects. Such teachers, if in need of supplementary or refresher training, are sometimes given an opportunity to secure such work in regular or special courses offered by the institutions. Faculty transfers of this kind were described by 9 institutions of higher education, and other colleges are known to be arranging such transfers also.

STUDENT ENROLLMENTS

In general, the trend in enrollment of college students had been steadily upward throughout the twentieth century until 1940. Then, between the autumn of 1940 and that of 1941, total enrollment decreased by about 8 per cent. Between the autumn of 1941 and that of 1942, the decrease for 882 institutions reporting was 13 per cent. The estimated total full-time enrollment in all institutions of higher education in 1942-43 was 1,209,150 (table VII).

The decline in enrollment from October 15, 1941, to October 15, 1942, was 14.5 per cent for publicly controlled institutions and 12.1 per cent for privately controlled institutions. Losses in junior colleges (22.8 per cent), in teachers colleges (22.2 per cent) and in normal schools (27.6 per cent) were considerably greater than the losses in universities, colleges, and professional schools (11.0 per cent). The teacher-education institutions as a group have lost one-third of their enrollments during the past two years, which partially explains the present shortage of teachers in the public schools.

TABLE VII

ENROLLMENT IN INSTITUTIONS OF HIGHER EDUCATION, 1939-40, AND ESTIMATED ENROLLMENTS, 1941-42 AND 1942-43, BY TYPE OF INSTITUTION[a]

Institutions of Higher Education, by Type	Enrollments and Per Cent Decrease				
	Enrollment 1939-40[b]	Per cent decrease, 1939-40 to 1941-42	Estimated enrollment 1941-42[c]	Per cent decrease, 1941-42 to 1942-43	Estimated enrollment 1942-43[d]
All institutions	1,493,203	6.6	1,395,280	13.3	1,209,150
Men	892,250	8.7	814,830	15.5	688,350
Women	600,953	3.4	580,450	10.3	520,800
Universities, colleges, and professional schools	1,166,304	4.8	1,110,060	11.0	988,570
Men	742,398	6.7	692,430	13.3	600,060
Women	423,906	1.5	417,630	7.0	388,510
Teachers colleges	163,896	18.1	134,280	22.2	104,540
Men	65,581	28.3	47,010	28.6	33,580
Women	98,315	11.3	87,270	18.7	70,960
Normal schools	13,249	14.5	11,320	27.6	8,200
Men	3,342	30.6	2,310	38.9	1,420
Women	9,807	8.2	9,010	24.7	6,780
Junior colleges	149,854	6.8	139,620	22.8	107,840
Men	80,929	9.7	73,080	27.1	53,290
Women	68,925	3.5	66,540	18.0	54,550
Publicly controlled institutions	796,531	9.0	724,950	14.5	619,910
Men	470,006	11.5	415,750	15.5	351,250
Women	326,525	5.3	309,200	13.1	268,660
Universities, colleges, and professional schools	520,677	6.1	489,070	9.6	442,070
Men	340,284	8.2	312,370	11.2	277,390
Women	180,393	2.0	176,700	6.8	164,680
Teachers colleges	157,313	18.3	128,610	22.6	99,510
Men	63,456	28.4	45,470	27.8	32,830
Women	93,857	11.4	83,140	19.8	66,680
Normal schools	10,988	13.3	9,530	31.3	6,550
Men	3,043	29.2	2,150	40.8	1,280
Women	7,945	7.2	7,380	28.5	5,270
Junior colleges	107,553	9.1	97,740	26.6	71,780
Men	63,223	11.7	55,760	28.7	39,750
Women	44,330	5.3	41,980	23.7	32,030
Privately controlled institutions	696,672	3.8	670,330	12.1	589,240
Men	422,244	5.5	399,080	15.5	337,100
Women	274,428	1.2	271,250	7.0	252,140
Universities, colleges, and professional schools	645,627	3.8	620,990	12.0	546,500
Men	402,114	5.5	380,060	15.1	322,670
Women	243,513	1.1	240,930	7.1	223,830
Teachers colleges	6,583	13.9	5,670	11.3	5,030
Men	2,125	27.5	1,540	51.4	750
Women	4,458	7.5	4,130	+3.7[e]	4,280

TABLE VII—*Continued*

Institutions of Higher Education, by Type	Enrollments and Per Cent Decrease				
	Enrollment 1939–40[b]	Per cent decrease, 1939–40 to 1941–42	Estimated enrollment 1941–42[c]	Per cent decrease, 1941–42 to 1942–43	Estimated enrollment 1942–43[d]
Normal schools	2,161	16.8	1,790	8.1	1,650
Men	299	44.8	160	13.2	140
Women	1,862	12.4	1,630	7.6	1,510
Junior colleges	42,301	1.0	41,880	13.9	36,060
Men	17,706	2.2	17,320	21.8	13,540
Woman	24,595	0.1	24,560	8.3	22,520

[a] This table was published in *Education for Victory* Vol. 1, No. 25, March 1, 1943, p. 24.
[b] Returns from 1,708 institutions.
[c] Estimates based on returns from 969 institutions.
[d] Estimates based on returns from 882 institutions.
[e] Increase.

Decreases in enrollments were greater for men students than for women students from October 15, 1941, to October 15, 1942, amounting to 15.5 per cent and 10.3 per cent, respectively. Since only 7 per cent of the men students are less than 18 years of age, the decline in men students regularly enrolled will be even sharper for the coming year.

Losses in first-year enrollments.—The number of students enrolled for the first time in college was 9.5 per cent less in October 1942 than in October 1941 (table VIII). The decrease was approximately the same for men and for women. It was appreciably greater, however, in publicly than in privately controlled institutions. Junior colleges, teachers colleges, and normal schools all had enrollments of first-year students which were about 20 per cent below those of the preceding year.

Enrollments in specific fields.—Enrollments in the junior and senior years and in graduate work in subjects considered of special importance in connection with the war were reported by 781 or 64.9 per cent of the 4-year degree-granting colleges and universities (table IX). The ratios of men to women in junior and senior year chemistry and physics were approximately 4 to 1 and 7 to 1 respectively. Among graduate students the differences by sex were even greater. In most fields of graduate work the total number of students reported was too small to meet the demand for specialized training.

FINANCES

Reports from 788 institutions of higher education, or 45.9 per cent

TABLE VIII

STUDENTS ENROLLED FOR THE FIRST TIME IN ANY COLLEGE, OCTOBER 15, 1941, AND OCTOBER 15, 1942, AS REPORTED BY 794 INSTITUTIONS OF HIGHER EDUCATION, BY TYPE OF INSTITUTION AND BY SEX

Type of Institution	Number of Institutions Reporting	Number of Students First Time in Any College, October 15						Per Cent Change 1941 to 1942		
		1941			1942					
		Total	Men	Women	Total	Men	Women	Total	Men	Women
All institutions	794	202,581	116,563	86,018	183,335	105,583	77,752	−9.5	−9.4	−9.7
Universities, colleges, and professional schools	486	147,843	92,703	55,140	139,716	86,805	52,911	−5.5	−6.4	−4.1
Teachers colleges	117	25,252	8,979	16,273	20,152	7,234	12,918	−20.2	−19.5	−20.7
Normal schools	13	858	200	658	692	154	538	−19.4	−23.0	−18.3
Junior colleges	178	28,628	14,681	13,947	22,775	11,390	11,385	−20.5	−22.5	−18.4
Publicly controlled institutions	294	107,980	59,943	48,037	93,488	52,984	40,504	−13.4	−11.7	−15.7
Universities, colleges, and professional schools	90	62,015	39,432	22,583	57,634	36,962	20,672	−7.1	−6.3	−8.5
Teachers colleges	112	24,950	8,948	16,002	19,785	7,196	12,589	−20.8	−19.6	−21.4
Normal schools	7	562	122	440	421	69	352	−25.1	−43.5	−20.0
Junior colleges	85	20,453	11,441	9,012	15,648	8,757	6,891	−23.5	−23.5	−23.5
Privately controlled institutions	500	94,601	56,620	37,981	89,847	52,599	37,248	−5.0	−7.2	−2.0
Universities, colleges, and professional schools	396	85,828	53,271	32,557	82,082	49,843	32,239	−4.4	−6.5	−1.0
Teachers colleges	5	302	31	271	367	38	329	+21.5	+22.5	+21.4
Normal schools	6	296	78	218	271	85	186	−8.6	+8.9	−14.6
Junior colleges	93	8,175	3,240	4,935	7,127	2,633	4,494	−12.9	−18.8	−9.0

TABLE IX

STUDENTS ENROLLED IN SPECIFIED FIELDS, OCTOBER 15, 1942, AS UNDERGRADUATE OR GRADUATE MAJORS, AS REPORTED BY 781 DEGREE-GRANTING INSTITUTIONS OF HIGHER EDUCATION, BY SEX

Field[a]	Number of Institutions Reporting	Students Enrolled							
		Undergraduate				Graduate			
		Junior year		Senior year		First year		Second or third year	
		Men	Women	Men	Women	Men	Women	Men	Women
Biology	475	2,404	1,624	1,958	1,371	394	371	197	114
Chemistry	501	3,783	1,112	3,087	840	1,066	215	890	69
Economics	345	4,522	1,353	4,087	1,215	249	107	230	101
Engineering:									
Aeronautical	32	816	1	590	—	53	1	10	—
Chemical	81	2,593	24	2,050	2	257	3	149	1
Civil	101	1,709	15	1,446	5	109	—	42	—
Electrical	102	2,326	17	1,858	1	221	3	72	—
Mechanical	99	4,094	26	3,354	7	162	—	74	1
Unclassified	44	1,402	2	1,204	2	97	2	42	—
Home economics	281	16	6,049	21	6,021	2	600	5	149
Mathematics	463	1,305	892	1,062	785	181	109	113	52
Pharmacy	43	911	162	921	132	43	29	23	2
Physics	233	1,006	138	743	103	310	24	201	21
Psychology	239	742	1,264	611	1,062	163	230	69	78
Secretarial work	187	422	2,442	308	1,936	9	51	—	—
Sociology	316	885	2,146	761	1,986	139	316	126	256

[a] Fairly complete total enrollment figures in certain fields were reported for the early fall of 1942 by the respective National organizations as follows:

Medicine: 77 schools, 22,674 students; dentistry: 39 schools, 8,848 students; and pharmacy: 67 schools, about 7,800 students.

TABLE X

PER CENT CHANGE IN EDUCATIONAL AND GENERAL EXPENDITURES, 1941–42 TO 1942–43, AS REPORTED BY 788 INSTITUTIONS OF HIGHER EDUCATION, BY TYPE OF INSTITUTION

Type of Institution	Number of Institutions Reporting	Per Cent Change in Expenditures
All institutions	788	−0.1
Universities, colleges, and professional schools	478	−0.2
Teachers colleges	116	−0.7
Normal schools	12	−5.0
Junior colleges	182	+2.2
Publicly controlled institutions	299	−0.4
Universities, colleges, and professional schools	86	−0.9
Teachers colleges	111	−0.4
Normal schools	7	−6.8
Junior colleges	95	+4.7
Privately controlled institutions	489	+0.2
Universities, colleges, and professional schools	392	+0.4
Teachers colleges	5	−8.0
Normal schools	5	−0.5
Junior colleges	87	−3.0

of the entire number, showed that their total 1942-43 budgets were only one-tenth of one per cent less than those on which they operated in 1941-42 (table X). Although supporting data are inadequate, it appears possible that appropriations from public sources were partially responsible for the comparatively stable position of higher education finance. Finances of institutions of higher education are budgeted, as a rule, a year or more in advance and for that reason do not immediately reflect changing financial conditions.

Vacancies not filled.—Closely connected with the relatively stable position of college budgets is the fact that few college teaching positions have been allowed to lapse by reason of shortage of funds. Only 772 positions were reported in the 1941-42 budgets which were not being filled for 1942-43 as a result of shortage of funds, with only 163 institutions making such reports. Of the new positions created for 1942-43, only 29 were reported as still unfilled on October 15 through shortage of funds with only 14 institutions making such reports. The total of 801 positions unfilled for financial reasons was approximately 1.5 per cent of the total number of full-time positions planned for 1942-43 and accounted for about half of all unfilled positions reported as of October 15, 1942.

College Plans for Old Age and Survivors Benefits

RAINARD B. ROBBINS

TIME was when a retirement plan consisted of an announcement that if and when a worker was retired from service a benefit might be expected. This was, in effect, an assurance that if thrown on the scrap heap because of age the worker would not starve. These statements varied widely but, as a rule, no explicit contribution was required of the worker, retirement was at the discretion of the employer, and no problem as to the financing of benefits was recognized.

Today, the adoption of a retirement plan is a serious matter for any employer. It usually means the determination of a policy with respect to retirement and a definite plan for retirement income. With rare exceptions the worker contributes toward support of the plan. A feeling of responsibility for the financing of benefits is a most serious deterrent to unduly liberal benefits and, at times, to the adoption of any plan at all. While the obligations of the employer may or may not be contractual, public sentiment is such that no employer thinks of being capricious about meeting expectations with respect to income after retirement.

College plans for retirement and income after retirement have followed the evolution just outlined. Today a large majority of these are joint-contributory arrangements. At a number of publicly administered institutions joint contributions are paid into separately incorporated funds to furnish retirement income to public employees. Aside from these, most of the joint-contributory college retirement plans specify that contributions shall become premiums for retirement annuity contracts issued by life insurance companies.[1]

Some years ago a few prominent universities undertook to mingle joint contributions toward retirement benefits with other college funds, and several smaller colleges followed this lead; but events of recent years have apparently brought conviction of the unwisdom of this procedure and only a few institutions still follow it. This change of view reflects in part a fear that a hard-pressed board of

[1] For a review of college retirement plans and a description of each one in operation at the close of 1939, see the writer's "College Plans for Retirement Income"—Columbia University Press, 1940.

trustees might be tempted to mortgage or confiscate such funds for purposes foreign to retirement benefits, in part a conviction that it is poor policy for the college to undertake anything so foreign to the purpose of its existence as the annuity business, and in part a fear—apparently well founded—that rulings of state and Federal income tax authorities might embarrass the college when income payments begin to retired individuals.

Perhaps a word of warning is in place at this point to those who are tempted to recommend that a college finance its own retirement plan, with reference to the nature of the annuity business. It may seem elementary that if a life insurance company can afford to pay a certain annuity in exchange for, say $10,000, the college can do the same with some saving in expenses and with a prospect of gain in case of early death of the annuitant. The possibility that the annuitant may outlive his allotted span is too often ignored. The essential difference between a college and a life insurance company in this respect is that, while the college expects to deal with only a few annuitants at any one time, the life insurance company expects to deal with thousands of them. Thus, by sheer numbers the insurance company minimizes the risk that too many of its annuitants may live too long. If a college avoids the average outlay that would be involved in purchasing the annuity benefits that it promises, in the hope that actual payments will require less, the smallness of the number of cases with which it deals exposes it to the danger of excessive outlays through the perversity of annuitants who insist on living too long. This is, of course, the fundamental principle of insurance, and gambling with respect to a small number of annuities may involve pretty large stakes.

I trust that a brief digression to an allied topic may be forgiven even though it has only an indirect bearing on the subject of this discussion. It seems that with the drying up of endowment sources and with the increased pressure on college incomes that has come with decreasing investment yields, officers of a number of colleges are being tempted to enter what is to all intents and purposes the annuity business; and they enter this business knowing full well that no one college can hope to have a sufficient volume of it to give the law of averages a chance to apply. This begins under the guise of gifts; but it seems that officers of too many colleges are trying to "outsmart" individuals who have no loyalty to any one college and who are deliberately "shopping around" to find the college that will

give them the largest annuity promise for their few thousands of dollars or their piece of property of doubtful value. Were the statement not vouched for by one who has made a careful study of the facts, it would seem incredible that, so far as is known, not a single college undertaking this form of gambling protects itself with respect to even part of the risk involved, by purchasing annuities from companies authorized by law to deal with such risks. Even if a college offers annuities at rates considerably more conservative than those of life insurance companies, it is exposed to the danger of loss that is due to the small numbers involved and is thus subjecting other college funds to risks entirely foreign to the normal conduct of a college.

Returning to the financing of retirement plans and recognizing the widespread conviction that this should be in the hands of a third party qualified and authorized to do this form of business, a responsibility of considerable magnitude is involved in choosing this third party. If a retirement plan is to be of most value to the institution, participation in it should be required and, when the college requires that the staff member contribute toward the purchase of a retirement annuity from a designated company, responsibility is involved in the choice of company.

The obvious way for the college to avoid this responsibility is to let each individual choose the company to which contributions on his behalf shall be paid and this method has been adopted by a few institutions. But this solution is not as nearly perfect as it may seem at first thought. Only a small proportion of the participants are qualified to choose intelligently between the offerings of different companies; most of them would be easy prey to the representations of the salesman who might seem most plausible. A thoroughly studied decision by a committee of those qualified to judge might very well involve an investigation the scope of which would be impracticable for any substantial number of individuals acting separately. Furthermore, the institution itself has far more at stake than has any individual. It can probably not avoid considerable moral responsibility as to the outcome of its efforts to see that income is forthcoming at retirement and, therefore, should have much to say in the choice of the insurance company.

Also, the type of contract is important and this narrows the choice of company. With only a few exceptions, colleges have chosen individual retirement annuity contracts for the funding of their retirement plans rather than the group annuity contracts that are generally used

in the funding of such plans in industry. For many years college trustees and their faculties have held strongly the view that the annuity contracts used to fund their retirement plans should be between the individuals and an insurance company and that the college should not be a party to such contracts. When a contract holder leaves an institution that has contributed toward premium payments, the whole equity goes with the individual; nothing is returned to the institution and the equity in the contract is just as large immediately after the separation as before. This arrangement avoids interference with the free transfer of staff members between different colleges and universities—a practice that is considered essential for the best interests of our educational institutions.

To be best adapted for the funding of college retirement plans, it is essential that the contract be non-cashable; otherwise the owner could defeat the purpose of the employing institution in inaugurating the retirement plan. It is also important that a contract have several elements of flexibility that were not found in the contracts of any company when the adoption of contributory retirement plans was first urged on colleges and universities, back in 1918, by the Carnegie Foundation for the Advancement of Teaching. Partly for this reason a special life insurance company[2] was organized for the definite purpose of funding such plans. It is often convenient that the contributions under a retirement arrangement be a fixed percentage of salary; under such a plan contributions will automatically increase with salary. Hence, it is important that the retirement annuity contract provide for increase in premiums from time to time as may be desired.

It is difficult to anticipate twenty or thirty years in advance just when it may be best to have annuity payments begin. Hence the advantage of a contract that permits change in the date as of which annuity payments shall begin. This element of flexibility rarely existed in contracts issued twenty years ago, and even today many companies insist on limitations to its application.

It is important to the contract holder that he be permitted to delay choice of the type of annuity that he shall receive until the time when annuity payments are to begin. If he is forced to choose earlier, changes in his family and in his responsibility to its members may make it highly desirable that he revise his choice. The retirement annuity

[2] Teachers Insurance and Annuity Association, available to staff members of colleges and universities in the United States, Canada and Newfoundland. It has no agents, sells life insurance and annuity contracts by mail from its office in New York, and funds the retirement plans of more than 200 colleges and universities.

contracts of many companies contain troublesome limitations in this respect.

Considerations such as these lead the writer to the conclusion that individual staff members should not decide as to the type of contract or the insurance carrier for a compulsory joint-contributory retirement plan. Most staff members value the opportunity to participate in such a plan and understand in a general way that their contributions are being matched by the institution to provide an old age income, but in their early years of employment they are usually not informed about, and not deeply concerned with, details as to carrier and coverage which may later prove to be of vital interest to them. If the institution is convinced that a worker should be required to provide for old age income, and if it backs up this conviction by paying half the cost, it should be realistic enough to recognize that a well-chosen investigating committee can make a far better decision regarding contract and carrier than can the participants under the plan acting separately.

A plan for retirement income is a personnel measure designed to enable the institution to part in a socially acceptable manner with superannuated staff members. But a college is justified in expecting more than this from its contributions to such a plan. It should also expect the plan to help (a) to get good men; (b) to hold good men; and (c) to part amicably with men who have ceased to be promising although not yet superannuated. These objectives give added force to the view that the employing institution should shoulder the responsibility of determining the contract and carrier to be used in funding the plan.

Another question that must be faced if a life insurance company is to be used is the relative merits of individual annuity contracts and group annuity contracts. Colleges seem to have had little difficulty in making decisions on this point; very few use group annuity contracts. This seems to be sound. Most college retirement plans have been devised primarily to cover faculty members and, as stated in an earlier paragraph, it has seemed important to do nothing to impede the easy transfer of staff members between institutions. Group annuity contracts were devised particularly to meet the problems of large industrial concerns and usually contain restrictive features that colleges have wished to avoid in their plans. It means much to the professional worker and to his college that he own individually the contract that assures his retirement income; this could not be under a group plan. The individual wants to be able to continue his contract undisturbed if his employment at a particular college ceases; this he

could not do under a group contract. The right to pay additional premiums whether or not related to salary, and the retention of all elements of flexibility in the contract regardless of whether or not premiums are continued as originally planned are both important; they are not provided under a group contract.

Apparently an element that has drawn a few institutions to the group annuity contract is the arrangement that the institution shall retain the contributions it has made on behalf of a participant if he withdraws from service before qualifying for retirement. This method of economizing is common in industry. Repeatedly it has been seriously considered by colleges but rarely has it been adopted by those that are privately administered. It conflicts with the principle that provision for retirement income should be retained regardless of changes in employment—a principle that is behind the old age and survivors insurance provisions of the Social Security Act—and has already caused considerable disturbance upon discontinuance of employment after many years of contributory service. Superficially, it has in its favor a certain sense of plausibility in that the individual receives back the contributions he has made to the retirement plan; but it interferes with shifts of employment in middle age and leaves stranded those individuals who have been dismissed with no provision for old age income even after long years of contribution to a retirement plan. They would be "pension liabilities" for any prospective employer.

A question that must sometimes be faced at publicly administered institutions is whether plans for retirement income shall be financed through specially created organizations or through contracts with a life insurance company. Some such institutions are covered by plans that apply to broader groups of public employees; some have retirement systems for their own employees only; some use contracts of life insurance companies. The University of California has a plan created by special legislation which determines membership contributions and provisions for retirement. An administrative body invests contributions and is empowered to purchase annuities from a life insurance company for retiring employees.

Teachers in publicly administered institutions of college grade in Ohio come under the State Teachers Retirement System which is set up to provide reasonably adequate benefits for teachers receiving compensation up to $2,000 a year. Ohio State University supplements these benefits by contracts with life insurance companies.

In considering these different methods it seems important to bear

in mind that free interchange of professional talent between publicly and privately administered institutions is desirable from the standpoint of all concerned. This need not be hampered by the method of administering the retirement plan, but the sad fact is that it is hampered by many plans for public employees. With only a few exceptions retirement plans for public employees provide that, upon withdrawal from service, participation in the plan must cease and the withdrawing member is entitled to a return of his contributions, sometimes with and sometimes without interest. Provision for retirement income is thus defeated except in so far as the individual may use this payment to purchase an annuity and this annuity can usually be not more than half of what was originally contemplated. A person who has spent a good many years at an institution with such a plan is inhibited from moving to another institution or to other employment because of the loss that he will necessarily sustain by such a step.

It is a satisfaction to note that this defect does not mar the Wisconsin State Retirement System and that the plan of the University of California is free from it for those who serve more than four years. It curses nearly all other state and municipal contributory teacher and employee retirement plans. Just why this uniformity in a defect should exist is not clear unless it be due to the tendency of legislative bodies to copy what earlier ones have done.

It, therefore, seems important that any committee with the task of recommending provisions of a retirement system for a publicly administered institution give special attention to the nature of the benefits to be provided, regardless of what may be determined as to the method of funding. Perhaps the tendency of the layman is to ignore death and withdrawal provisions of a retirement plan as of minor importance when, as a matter of fact, they may be the tail that wags the dog.

SURVIVORS BENEFITS

For the governing body of a college or university the maintenance of a plan for retirement income is in the "must" class. This body must see that the service of superannuated staff members is discontinued and public sentiment requires that income be available after retirement. While the college does not have the same responsibility for continuing support of dependents of those who die in service, it can well afford to provide temporary aid in the adjustments that must be made when a death occurs. Such a benefit is called for by the intimacy of campus contacts; it improves the morale of the whole staff; and

it avoids embarrassment to the various families concerned—the one in need and sympathetic neighbors and friends.

The size of the death benefit for which a college should be responsible will, of course, be a matter of opinion but it is generally agreed that the college need not undertake to meet completely the varying life insurance needs of its staff members; this is the responsibility of the individual. Furthermore, account can well be taken of the death benefit available under annuity contracts used in funding retirement plans. This death benefit is usually the accumulation of practically all contributions toward the annuity and hence is very small shortly after participation begins and quite substantial shortly before retirement. This justifies a supplementary death benefit that is large in early years and much smaller in later years. While this sort of life insurance benefit is rare under group life insurance contracts, it is available and has the virtue of meeting, at very modest cost, the essential needs that can reasonably be expected of the college and does so without exposing the college to material increases in cost in future years. Such increases have come to be definitely embarrassing to a number of institutions that were, unfortunately, "sold" liberal group life insurance contracts a dozen or more years ago with benefits related to salary.

A plan of term insurance has been devised called collective insurance under which the cost of the insurance of an individual is kept constant year after year as he grows older and the benefit decreases in such a way that each year's premium pays for that year's insurance. The result is a coverage, foolproof as to mounting cost, which, when combined with the death benefit of a retirement annuity contract, gives the dependents of a participant who dies in service as much as it seems essential that the college should be responsible for. As with the annuity contract, arrangements can be made for the cost to be shared between the individual and the college and, upon withdrawal from service, the individual may continue the policy alone.

THE FUTURE

Many colleges and universities, including a majority of the larger institutions, provide retirement income for professional staff members. Many others, including some outstanding ones, have not yet faced this problem realistically. When it comes to benefits for dependents of those who die in service, college thought has been somewhat muddled. The point of view of the institutions has been largely to help individuals to get cheap coverage without much clear thinking as to

the appropriateness of that coverage. The result is very substantial insurance for well-established older professors whose families could, if necessary, fend for themselves, and frequently no coverage for younger workers who have accomulated very little of this world's goods, whose salaries are small, and whose families are in real need whenever the breadwinner dies. These are the families that embarrass the college most during the readjustment period following the worker's death. Of course, the probability of death is smaller at these early ages; this lowers the cost of protection but helps the family not in the least when death occurs.

There is obviously much room for improvement in the plans now operating and, unfortunately, much to be done at institutions that heretofore centered attention elsewhere and neglected these personnel mechanisms that are so essential to the services the colleges exist to perform. The old story—no funds—is just as appropriate here as if it were given as a reason for failing to pay salaries. No economy is involved in closing one's eyes to these needs—only short-sighted procrastination.

Most institutions have failed as yet to provide retirement income or survivors benefits for maintenance employees. Eight years ago, organized opposition eliminated colleges and universities from the coverage of the Social Security Act with subsequent disappointment to many administrators. Today college officers excuse their procrastination in establishing benefit plans for maintenance employees on the ground that the social security coverage may be extended at any time. This uncertainty is disconcerting but the national coverage would, at best, need to be supplemented by private arrangements and this is leading some college officers to the view that they had better proceed with a substitute for social security with the thought of modifying their plans if and when the extension of social security comes to pass.

It is futile to generalize as to the action that is advisable at particular institutions. But it is surely the part of wisdom that someone at each institution should be thoroughly familiar with these matters, and the administration should not stop short of formulating and reviewing suggestions periodically even though the decision may frequently be negative. A defeatist attitude may be dangerous to the welfare of the institution and the decision to do nothing should be supported by a detailed analysis of the facts. With such a record, periodic reviews should bring to light promptly any changes that make previous arguments untenable and thus may lead to changes in recommendations.

The Role of Modern Foreign Languages in Post-War Education

A Compendium of Current Opinion

LAURENCE HERVEY SKINNER

ROBERT LINCOLN KELLY, who was executive director of the Association of American Colleges from 1917 to 1937, tells this story in his book, *The American Colleges and the Social Order:*

> "As a boy on a western Indiana farm, I was told of a pioneer farmer in whose hog-lot a hollow tree had fallen in such position that one end of the tree projected over a brook. The pigs would crowd into the land end and finally Pig No. 1, urged on by his comrades in crime, would be forced to tumble out the other end and splash into the water, only to come up and restart the process of perpetual motion. In the past, a great deal of pig psychology has gone into the construction of the college curriculum. For a long time the philosophical and classical litters were unmolested. But in time the natural sciences litter nosed itself in to be followed by that of the social sciences. Philosophy and Greek and Christian Evidences each had its cold bath; then Latin, and now the modern languages."

The modern languages have indeed had their bath, and a cold one. But a new day is dawning. In the post-war world there will be a great resurgence of the study of modern foreign languages. This will be attributable to a number of factors which yesterday were at once unpredictable and inevitable. Before proceeding to a discussion of these factors a rapid glance backward and an examination of the present status of modern languages will be profitable.

The first professorship of modern language in this country was established with the aid of Thomas Jefferson in 1779 at the College of William and Mary. French, German, Spanish and Italian were offered. In 1817 Harvard appointed George Ticknor Professor of French and Spanish and in 1825 appointed Carl Follen, a professor of Church History and Ethics, to teach German along with his other subjects. Longfellow was made a professor of Modern Languages at Bowdoin in 1825. Ticknor and Longfellow by their scholarship and enthusiasm had much to do with the growth of modern language instruction. By 1884 the majority of the sixty leading American colleges

and universities required knowledge of a foreign language for entrance. By 1910, 210 of 340 colleges required modern language for graduation in most of their courses. 1883 is a capital date, for it was then that the Modern Language Association of America was founded. From that organization emerged, in 1898, a report on the objectives of modern foreign language instruction by the so-called Committee of Twelve. Their report stated the objective to be a four-fold mastery of the foreign language—comprehension, speaking, reading, and writing, and in that order. It is to be remembered that the average minimum course in 1898 was one of four years. During the first decade and a half in the present century the modern languages were increasingly studied and enjoyed growing public favor. It was only a question of which should prosper the more, French or German, and there existed a rivalry which for the most part was healthy and controlled. French enjoyed a cultural recognition that dated from the 17th century, but German found its advocates in our German-American citizenry and in a generation of American scholars in the various disciplines who had received their graduate training in the German universities.

Then came the world war and German fell into a disfavor from which it had only partly recovered when the present war began. With naive insularity the American people first took the attitude that they would show their scorn for Germany by refusing to learn her language. Then when the war venom had somewhat spent itself, the internal conditions of Germany were such that she was no longer making the significant scientific and cultural contributions that had given her prestige for half a century or more.

After World War I, our desertion of the League of Nations and a strong tendency toward isolation were reflected in modern language enrollments, and particularly in the length of time allotted to modern language study. Already in the early twenties the average language course consisted of but two years. Taking a realistic view of this situation, however undesirable it was to them, modern language teachers as a group founded in 1924 the Modern Foreign Language Study. This Study was financed with funds from the Carnegie Corporation and was sponsored by the American Council on Education. The committee was large, representative, and made up of capable scholars in the field. Their work was ended by 1928 although a further committee continued investigation of certain of the problems. This study reported as the chief objective capable of attainment within the aver-

age minimum of two years, a reading knowledge of the foreign language. This was in marked contrast to the report of the Committee of Twelve of 1898 but is explained by the halving in time of the average foreign language course. It is evident that this objective relegated the foreign language to the position of a tool subject. In line, however, with conditions as they were the committee sponsored a number of research projects, such as word counts, idiom lists and syntax counts. With these as yardsticks it was possible to prepare graded readers and grammars which contributed practically and scientifically to the achievement of reading ability. The work of the Study constitutes the most authoritative body of fact yet compiled on modern language teaching, and its importance in this field would be hard to overestimate.

The years from 1931 to 1941 witnessed a decline in the relative standing not only of the modern languages and literatures but of all the humanistic disciplines. This shift was the result of many factors. One, of course, was the amazing strides that, as the result of our inventive genius, were made in mechanics and in all branches of engineering. Surrounded with mechanical gadgets, and increasingly dependent upon them for our creature comforts and our practical efficiency, we were inclined to take a mechanistic view of life. Another factor was the vast and complex social changes taking place in the world which occasioned a swing to the social sciences—economics, political science, psychology and sociology. A third factor was the lowering of the norm of academic intelligence which resulted from the policy of keeping all boys and girls in school until a certain age and the desire of parents to give their children a college education, regardless of interest or ability. It is axiomatic that the more we reduce the mean of academic intelligence, the more the humanities will be neglected in favor of manual and vocational skills and techniques.[1]

Thus we arrive at the present. What is the place of the United States in the current world picture? The statistics that follow are taken from the data of the latest League of Nations report which was issued in 1937[2] These statistics concern thirty-seven countries. First, what is the age at which modern language instruction begins? Here is the answer:

[1] The foregoing remarks are drawn, in part, from the Presidential address, "Retrospect and Prospect", by Frederick Morgan Padelford, President for 1942 of the Modern Language Association (P M L A, Vol. LVII, Supplement, Part 2).

[2] My immediate source is an article by Fritz Thon of Teachers College, Columbia University, which appeared in *The French Review,* Vol. XV, No. 3.

At the age of 9	in 1 country
At the age of 10	in 8 countries
At the age of 11	in 8 countries
At the age of 12	in 17 countries
At the age of 13	in 2 countries
At the age of 15	in 1 country

Thus, 34 out of 37 countries begin their first modern language between the ages of 9 and 12. Only one country starts the first foreign language after 13—the United States.

Secondly, what is the length of the course?

1 country has a 9-year course
3 countries have an 8-year course
4 countries have a 7-year course
13 countries have a 6-year course
7 countries have a 5-year course
5 countries have a 4-year course
1 country has a 3-year course
2 countries have a 2-year course
1 country gave no exact data.

This table shows that 33 out of 37 countries teach the first modern language for 4 or more years. 21 countries out of 37 or 57 per cent teach it 6 years or more. The United States appears at the bottom of the scale together with Guatemala. Both teach the language for an average of only two years, but Guatemala tops this country inasmuch as all high school students take a three-year obligatory foreign language course in the elementary schools, so that there is a total of five years for the first foreign language in Guatemala. In summation of these statistics we find:

1. It is a well-established practice all over the world to start a foreign language in pre-adolescence (at the age of 12 or earlier) either in elementary or high school, and to teach it for four or more years.

2. The public schools of this country are at the bottom of the scale, whether we investigate the age of starting the first language, or the years of language work.

It is, therefore, clear that in linguistic achievement our students cannot possibly compete with any other student in the world—unless we start earlier, and double the years of teaching.

At the outset of this paper I suggested that there were certain fac-

tors which have suddenly come into being and which would be responsible for the coming upswing in the study of modern foreign languages. These are:

1. Our participation in a truly global war
2. The phenomenal advance in aviation with all its implications
3. Our leadership in the post-war world

The third factor may be broken down into

a. Our diplomatic functions
b. The economic world
c. Our role in political administration and rehabilitation

These factors will be discussed in order.

> "One of the many lessons taught us by the initial phases of the present war is that victory goes to the side that is better prepared. The preparation is not necessarily altogether military or mechanical. Often it is, in a restricted sense of the term, cultural. The story of the German parachutists, who came down in Holland equipped not only with Dutch uniforms, but with a command of the Dutch language, teaches a lesson which we cannot afford to disregard. The accounts of disguised German motorcyclists who swept across Belgium and northern France spreading disorder and panic in flawless French give additional evidence of the role which languages may play in modern warfare. The story, everywhere repeated, from Poland to Norway, from Denmark to Jugoslavia, is not only of secret activities carried on in the tongue of the victim nation, but also of extremely frequent command, on the part of large units of the forces of occupation, of the language of the invaded country. Military conquest in the present war has often been preceded, accompanied and aided by linguistic mastery of the tongue of the conquered by the conquerors.
>
> "But these striking episodes are by no means the only ones in which linguistic ability plays a part in warfare. Soldiers on ordinary duty who speak the language of their allies or enemies are better equipped, better prepared to question prisoners, to escape if captured, to communicate with civilians in occupied or allied countries for a multitude of purposes."[3]

Indeed, understanding a little of the language may mean the difference between life and death. Even a limited ability to meet the ordinary social situations greatly increases the co-operation given our troops by the people with whom they are billeted. There is probably

[3] From an article by Mario A. Pei in *The French Review*, Vol. XV, No. 2.

no quicker way of gaining the confidence of the foreign-speaking civilian or soldier—neutral, friend, or foe—than by speaking to him in his own tongue.

When war broke out we were dangerously short of linguists, even in the commonest European tongues. Linguistically, no great country was less prepared to fight a global war. Americans had little interest in foreign languages, and were intolerant of them both at home and abroad. Spanish and Portuguese, for instance, are among the easiest of languages for us to learn, but of the thousands of Americans in Latin America, only a handful can speak either of these languages with real fluency or correctness. When the Board of Economic Warfare combed the 48 states for experts who also spoke Spanish, it discovered only 115. But we are remedying this situation at long last. It has been found that when people really want to learn a language it can be done in one fourth the time required by the normal college procedure. Intensive courses are springing up everywhere and are getting amazing results. We are at last mastering foreign languages because we must. To cite one example which is typical: Yale University has inaugurated this spring "Foreign Area Studies" to give Americans entering upon active service abroad practical command of the languages and a sound knowledge of the people, customs, economic and social conditions, and political systems of the foreign countries in which they may be assigned to duty. The program is designed primarily for members of the armed forces, of government agencies, and relief organizations. Students divide their time evenly between intensive language study and analytical courses on the region.

So the war has exploded the myth that Americans have too little linguistic ability, or are too proud, to learn foreign languages and learn them fast. As I have suggested, intensive courses have been set up in Spanish, Portuguese, Russian, German, French, Chinese, Persian, Japanese, and a dozen other tongues, in a score of Universities and training centers. Most of these courses are under the auspices of the language section of the American Council of Learned Societies working for and with the armed services. The graduates are demonstrating that they can talk to and be understood by natives in any corner of the world. They are giving us new weapons to help win a global war. When the time comes these weapons will be even more valuable in winning a global peace.[4]

[4] See the article by Nicholas Pastore in *School and Society,* Vol. 57, No. 1475.

The second factor that I suggested is the phenomenal development of the airplane and air travel. It staggers the imagination. Since our forefathers' day the world has been reduced immeasurably. As the world grows smaller in size we inevitably become more language conscious. In the post-war world we shall rub elbows with foreign speaking nations just as frequently as did Switzerland a hundred years ago. And it is a well known fact that a hundred years ago Switzerland was a four-tongued nation. Major de Seversky, the noted airplane designer, has practical models of airplanes for civilian travel which will seat two to four hundred passengers exclusive of crew. As inveterate travellers, Americans are sure to use them. A lead article in a recent number of the national magazine *This Week* (March 21, 1943) prints the following air timetable of tomorrow:

East	
New York to London	10 hours
New York to Moscow	14 hours
New York to Cairo	16 hours
New York to Rio	15 hours
West	
San Francisco to Chungking	20 hours
San Francisco to Calcutta	24 hours
San Francisco to Sydney	20 hours
San Francisco to Manila	21 hours

The article by Major William N. Vickers, Jr., describes how the Air Transport Command is already pointing the way. One day Washington got a radiogram from General MacArthur, in Australia, asking for several thousand special devices for his planes. As you know it is 28 days by freighter from San Francisco to Australia. But exactly two days, fourteen hours, after General MacArthur sent his radio message, an Air Transport Command plane landed at his headquarters with five thousand pounds of these devices.

Up in Alaska a twenty-four bed hospital was burned to the ground. The Air Transport Command flew in a brand new hospital, complete from roof to thermometers, in 36 hours.

Major Vickers, who is a veteran transport pilot, goes on to tell the following significant story:

> "The other day I met a chap in Washington. 'Hey there, Jack,' I said, 'Haven't seen you for a couple of weeks.'

" 'No,' he said, 'I ran over to India for my laundry.'

"And when I suddenly realized that I now have laundry waiting for me on three different continents, it dawned on me that the world has changed some since I studied geography in school back in 1928."

The third suggested factor is our post-war triple role in the field of diplomacy, economics, and political administration and rehabilitation.

For our diplomats a mastery of the language of the country in which they are to operate is a *sine qua non*. If we want inter-cultural co-operation we must meet the other fellow on his own ground. The person who goes to South America with only a pocket dictionary smattering of Spanish and Portuguese, no matter what his objective, is tremendously handicapped. It is a sorry good-will ambassador who must ask his foreign host to speak to him in English. When President Roosevelt spoke in very passable French to France and French Africa soon after the landing of our troops, he accomplished more than a thousand pages of logical prose expressed in English.

The *leitmotiv* running throughout all the newspaper accounts of the Central and South American tour of Vice-President Wallace is his fluency in spoken Spanish. I quote from the A.P. correspondent at San Jose, Costa Rica, under date of March 19, 1943: "Wallace addressed the Costa Rica congress in Spanish. His use of the language aroused enthusiastic praise. Both officialdom and the man in the street expressed admiration that someone in such a high post had achieved such fluency in a new language."

I think it may be admitted that while the logic of a speech in English may attract the mind of the hearer when translated, a speech in his own language touches his heart.

In the post-war world economic competition will be more intensive than ever. The day is past when one may say "If you want to buy goods from me you will have to speak English!" An opposite example is that of Germany, which entered the ranks of the trading nations last and was thereby handicapped in her commercial development. When Germany finally entered the markets of the world as a trading nation, late in the 19th century, she quickly improved her methods of teaching foreign language. Before the end of the century her citizens were selling goods to many countries, using always the language of the country itself as a means of communication. This fact was an important factor in her phenomonal commercial progress before 1914.

Today in the University of Berlin language study has been given the status of an independent faculty and comprises several departments. One of the last numbers of *Facts in Review* states: "The new faculty is called the Auslandswissenschaftliche Fakultät, the Faculty for the Study of Foreign Countries and Languages. This implies teaching and research in practically all spheres connected with foreign countries. There is one group of departments dealing with the culture, social structure, home and foreign policy of individual countries, including the United States, the Western European Powers, the Iberian group, the Scandinavian countries, Russia, and the Far East. The new degree, Doktor der Auslandswissenschaften, Doctor of Foreign Politics, Sociology and Languages, fills an obvious and long-felt need."

One reason why Holland has been so successful in her colonial relations is because she has not imposed another way of life upon her colonies, but has let them follow their own mores. Holland has wisely studied their languages and sponsored their cultures.

No country in the world has studied foreign civilizations in recent years so assiduously as Japan. She realizes that language can be an instrument of economic penetration, that language has become more and more an instrument of peace and of war. The more advanced civilization grows, the keener and more refined do the weapons become.

Social and economic life has become so complicated, competition has become so fierce, that the preservation of the balance of power must be the result not so much of force but of psychology and good will. This means a thorough knowledge of language as a basis for our dealings with other nations. The United States, becoming of late the number one economic power of the world, will have to meet unusual obligations to all other nations. Without language knowledge and many other qualifications in this modern age, failure to meet our obligations and an eventual breakdown of our economic power will be the inevitable results.[5]

As regards post-war reconstruction and rehabilitation the United States will, without question, bear the heaviest burden. Everywhere in the Axis-occupied countries occurs a systematic extermination of leadership—in education, religion, government, economy. It will devolve upon the United States to supply temporary leadership in many fields. Great numbers of civilian administrators will have to accom-

[5] For a fuller treatment see an article by Leonard Koester of the University of Louisville, in *The Modern Language Journal,* Vol. XXVI, No. 2.

pany our distribution of food abroad, will have to work with industry as it re-establishes itself. If this civilian mission of good will is to succeed, if there is to be interaction that will result in lasting understanding and friendship between peoples, it must operate in the languages of the countries involved. Anything less sets its own limits on what we would label good will; anything less is indicative of a sense of English-language superiority we cannot afford to have intrude upon a world we are tenuously rebuilding.

In the current feverish attempt to gear the high schools to the war program, one blind spot becomes more and more apparent. Enrollments increase in mathematics, physics, and chemistry; the work in physical education grows more severe; and all of this is quite proper. Yet, at the same time, language enrollment is allowed to shrink. This is astonishing blindness in a global war. It is isolationism in a world where isolationism is buried with every American soldier who lies in Bataan, North Africa, the Aleutians, China, the Near East, and Guadalcanal. We are fighting not an American war; we are fighting a world war—a war for ultimate partnership and understanding among peoples whatever their present status in the scale of self-government, whatever their tongue. But understanding and partnership are two-way processes, and in them language is an indispensable tool. We cannot really sit back snugly within a narrow English-language horizon and expect the other peoples of the world to fit themselves into it. Our recent awakening to this fact in connection with Mexico and South and Central America is a case in point. The impetus toward the study of Spanish that has resulted indicates the direction we must travel in an ever broader radius.[6]

In view of the evidence here adduced I am prepared to hazard a number of predictions:[7]

1. The United States will not avoid its responsibility of leadership in the post-war world.

2. The United States will never again adopt a head-in-the-sand ostrich policy until the rude awakening of another Pearl Harbor.

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[6] Excerpts from M. Margaret Anderson's article in *Common Ground* (Winter, 1943).

[7] Certain of these predictions are mine; others are proposals summarized from the remarks of the speakers who took part in a symposium conducted on the topic "The Validity of Foreign Language Instruction in High School" at the annual meeting of the American Association of School Administrators held in San Francisco in February 1942, as reported by F. H. Reinsch in *The Modern Language Journal*, Vol. XXVI, No. 7.

3. In line with the above some familiarity with the intellectual and cultural attainments of at least one other nation will be regarded as an essential part of the mental equipment of every American citizen.

4. Since it is patently impossible to learn every foreign language, each language will have its particular field of value, and every student will exercise great care in selecting the first language to be studied.

5. Language study in the United States, in line with the other great nations of the world, will begin at a much earlier age, and will extend over a much longer period—perhaps a minimum of four years in the secondary schools.

6. The study of foreign literature will have its proper place but the majority of language courses will have a more practical aspect. Comprehension, speaking, and reading will be the foremost objectives, and grammar will be taught indirectly and functionally.

7. There will be a great emphasis on the civilization of the country whose language is studied—its political institutions, its economic practices, and its customs.

8. In the world of tomorrow, we may confidently hope for an enduring collaboration of democratic peoples who shall be free to cherish their own traditions, their own languages and their own ways of life. The language barrier has always been a source of misunderstanding and suspicion. Most of the non-English speaking countries are now placing special emphasis in their schools on the learning of English. To merit their confidence, we must reciprocate.

An Appraisal of Engineering, Science, and Management War Training

HENRY H. ARMSBY

IN THE absence of an annual convention of the American Association of Collegiate Registrars, I am gratified to have access to the pages of the JOURNAL in which to report on certain recent developments in Engineering, Science, and Management War Training (ESMWT), the college-level war training program sponsored by the U. S. Office of Education, and to call attention to some of the institutional problems which it creates. I think that college registrars, and indeed all college educators and administrators, will find points of interest in this emergency plan for the wartime use of our institutions of higher education.

On two previous occasions I have been privileged to report to the members of A.A.C.R. concerning this important Federally sponsored activity. During the annual meeting of 1941 I discussed "Engineering Defense Training" as it had developed in the first few months of its existence. My paper, "The ESMDT Program—Are the Colleges Meeting the Requirements of this Program?", was read at the 1942 annual meeting, and was subsequently published in the JOURNAL.

My present purpose is to attempt to acquaint the members of the Association with the principal developments in the program during its third year of life, under its new name, "Engineering, Science, and Management War Training." In order to do so it seems advisable to review briefly the record of the first two years to set the stage for later developments.

Early in the summer of 1940, when war seemed still distant, Dr. John W. Studebaker, United States Commissioner of Education, directed attention to the fact that the rapidly expanding national defense activities would make necessary a similar expansion of the existing facilities for the education and training of all types of industrial employees. It was recommended that the Federal government should sponsor this expansion, as an integral part of the national defense program. Inasmuch as the Smith-Hughes and George-Deen Acts had already established the principle of Federal support of State systems of vocational education, suggestions for the enlargement of this type of instruction under Federal sponsorship

fell on fertile ground, and in June of that year the Congress enacted legislation providing for a large expansion of vocational training activities, through the establishment in the U. S. Office of Education of the Vocational Education for National Defense program.

Dr. Studebaker consulted representatives of engineering education in an endeavor to determine whether their staffs and facilities could render their most effective contribution to the national defense by participation in this program or in some other way. It was agreed that the most effective plan lay in expanding the existing facilities of high schools and vocational schools to care for the training of production workers, leaving the colleges free to devote their energies to training on the college level, the level at which they were equipped and staffed to make their maximum contribution.

It was realized, even at that time, that a shortage of engineers would be one of the critical "bottlenecks" in the national defense effort. Indeed, it was already evident that the number of engineers who could be graduated from the engineering colleges would fall far short of filling the nation's needs for engineers, assistant engineers, and technicians to aid in the efficient planning, production, operation, management, and research so indispensable in the industrial expansion then contemplated. It was therefore decided that the greatest potential contribution of the engineering colleges lay in the training, on the college level, of men and women to fill vital technical and engineering posts.

To formulate plans for meeting the situation as it then appeared, Dr. Studebaker called Dean A. A. Potter of the Schools of Engineering of Purdue University to Washington as an expert consultant in the preparation of proposals to the Congress for the utilization of engineering colleges for this type of training.

Dean Potter suggested legislation embodying the results of his studies, and recommended the appointment of a National Advisory Committee on Engineering Defense Training. The Committee was appointed, and held its first meeting on September 20 and 21. With only a few changes in membership, that Committee is still functioning effectively to advise the U. S. Office of Education on matters pertaining to college-level war training. Dean Potter accepted the chairmanship of the Committee and has most admirably filled that position ever since.

Legislation embodying Dean Potter's recommendations, supplemented by certain additional suggestions of the National Advisory

Committee, was submitted to the Congress, which on October 9, 1940, established the Engineering Defense Training program in the U. S. Office of Education and authorized it to offer "short courses of college grade, designed to meet the shortage of engineers in activities essential to the national defense." R. A. Seaton, Dean of Engineering and Director of the Engineering Experiment Station, Kansas State College of Agriculture and Applied Science, was appointed Director of EDT.

On December 9, 1940, the first EDT course was started. During the remainder of the fiscal year ending June 20, 1941, a total of 120,802 persons were enrolled in 2,260 courses offered by 144 colleges.

At the turn of the fiscal year, on July 1, 1941, as a tribute to the accomplishments of EDT and in recognition of growing deficiencies of professional and technical personnel, an enlarged and broadened program was authorized by Congress. Under the new name of Engineering, Science, and Management Defense Training the participating colleges were authorized to conduct courses to meet shortages of chemists, physicists, and non-engineering production supervisors, as well as of engineers. Under the continued leadership of Dean Seaton and with the invaluable guidance of the National Advisory Committee, ESMDT enrolled a total of 438,503 men and women for intensive college-level training in 7,853 courses conducted by 196 colleges. Of these enrollments, 350,564 were in courses classified in the engineering field; 7,914 in courses for chemists; 5,813 in physics courses; and 74,212 in courses for non-engineering production supervisors.

The end of the second year of Federally sponsored college-level war training found our country actually at war and engaged in the full conversion of the national economy to a war footing. The need for technical training on the college level was more evident than ever, the necessary diversion of a large part of the manpower of the nation to the armed forces still further increasing the need for training of technical workers of all kinds. In recognition of these facts, the name of the program was changed a second time to its present name, "Engineering, Science, and Management War Training," and Congress provided a somewhat larger appropriation for the continuation of the work. George W. Case, Dean of Engineering, University of New Hampshire, succeeded Dean Seaton as Director when the latter was called back to his post at the Kansas State College of

Agriculture and Applied Science. Dean Case had been connected with the staff since its beginning, first as Principal Specialist in Engineering, and later as Deputy Director. The National Advisory Committee continued to function under the Chairmanship of Dean Potter, advising with Commissioner Studebaker and Dean Case on matters pertaining to the utilization of technical and professional colleges in the war effort.

During the fiscal year 1942-43 ESMWT trained nearly 600,000 men and women in about 13,000 courses conducted by 215 colleges in more than 1,000 towns and cities. The largest enrollments have persisted in engineering courses, which account for nearly 75% of all persons trained. Production supervision courses have enrolled approximately 20% of the trainees, while chemistry and physics courses make up the remaining 5%.

The colleges participating in ESMWT have, therefore, given training to well over a million men and women during the last two and a half years. In view of the many other calls on their time, energy, and facilities—by their accelerated programs, the special training programs for many branches of the armed forces, vital research projects under both private and Governmental sponsorship, and other war duties—this is a remarkable record, and one of which the colleges may well be proud. The contribution of the engineering colleges has been especially noteworthy. They have given training to about 800,000 persons in the two and a half years, and current enrollments average about 115,000 men and women at any given time, which is more than the total number of regular college engineering students in the United States, according to statistics recently released by the National Roster of Scientific and Specialized Personnel.

The program from its inception has operated on two basic principles, which still prevail. First, it is not intended to provide general engineering or technical education, but instead offers specific training to meet specific needs of war industries and Governmental agencies. Second, although Federally sponsored, it is not operated by the Federal government, but by the colleges, which are charged with the responsibility of ascertaining training needs and of developing special courses to meet these needs.

These fundamental principles have presented new problems to the colleges and have required some changes in their thinking and procedures. Under these concepts each ESMWT course must stand

alone—must be a complete unit in itself, instead of being a part of an organized curriculum, as are the courses offered to regular college students. Instead of attempting to acquaint the student with the general principles underlying many types of work, each ESMWT course must prepare its trainees for immediate employment in a limited field. Instead of assuming that the student enrolled in a course will be definitely prepared to take a prescribed course, the teacher of an ESMWT course must fit the course to the abilities and previous training of the trainees available, many of whom are women and older men with definite and immediate objectives, requiring different treatment from that given to regular college students, as to both subject matter and presentation. In ESMWT courses the major emphasis must be on practical applications, with only such theory as is necessary for proper understanding of the applications; as contrasted with the method generally followed in outlining regular college courses, which is to place the major emphasis on theory and to include sufficient practical applications to illustrate the theory.

The participating colleges have done a splendid job of pioneering in the development of new courses adapted to the abilities of available trainees and designed in close co-operation with industrial and Governmental officials to meet their specific wartime needs. The job has called for constant alertness, frequent revision of plans, and the closest possible relations with the management of war industries. It has been demonstrated over and over again through these two and a half years that the most successful ESMWT courses, as measured by sustained student interest and by the placement and promotion of trainees, have been those in which the co-operation of the colleges with the industry served has been the most effective.

The number and percentage of women and of older men among the trainees has increased markedly since our country became an actual World War belligerent. The necessary tremendous increases in all sorts of war production attendant on the conversion of our national economy to an "all out" war footing emphasized more than ever the need for technical college level training, as well as for many other kinds of training. The diversion to the armed forces of a large majority of the young men engaged in war industries led inevitably to a demand that women and older men be trained to replace them. The responsiveness of the organization to changing demands is exemplified by the growth in the percentage of women trainees. Women constituted less than 1% of all trainees under EDT,

9% under ESMDT, and 25% under ESMWT. No exact figures are at hand as to changes in age distribution among the men, but there is general agreement that there are now a much greater proportion than formerly in the ages above 38.

Women have enrolled in greatest numbers for engineering drawing courses, a type of training which accounts for about 20% of all female enrollments. About 12% of women trainees entered accounting courses. Other courses with substantial enrollments of women are: aeronautical engineering, personnel administration, inspection and testing, communications, surveying and mapping, engineering fundamentals, and analytical chemistry, in the order named. The courses with *lowest* proportion of *male* enrollments were: office management, analytical chemistry, inspection and testing, accounting, surveying and mapping, and fundamentals of engineering, in order of increasing male enrollment. From one-third to one-half of the trainees in all of these courses were women.

As has been pointed out, each ESMWT course is designed to prepare trainees for immediate service in some limited field. This means that in general each course is designed by one of the participating colleges to fill a local need. However, some training needs have been so widespread as to constitute national problems. In many such cases courses have been organized on a national basis, by the establishment of standard course outlines to serve as guides to the institutions. I mentioned in my 1942 paper the courses in Chemistry of Powder and Explosives, Ultra-High Frequency Techniques, and Safety Engineering, which were thus developed during EDT and ESMDT. During the fiscal year 1942-43 several new standard course outlines were prepared and put into use, among them being a course to train women for service as aircraft procurement inspectors, one to train women as junior engineers (supplemental) under Civil Service, and a course for the refresher training of teachers of mathematics and physics.

To train junior procurement inspectors for the Army Air Force a course in precision inspection was designed, with intensive training in one or more of four optional subjects co-ordinated with the kind of aircraft which the trainee would be charged with inspecting. The Air Force selected women for this training and paid them allowances during the period of their training.

The junior engineer-supplemental training course was instituted, in co-operation with the U. S. Civil Service Commission, to provide training for college women in preparation for Civil Service engineer-

ing jobs. The girls received instruction in engineering computations and problems, engineering drawing, elementary mechanics of materials, surveying, and shop processes and methods. Nearly 2,000 women were enrolled for this training.

Refresher courses in mathematics and physics for teachers were offered during the summer of 1942, but enrollments were disappointingly low, despite the need for teachers to conduct greatly expanded instruction in those subjects. It became apparent with the fall opening of the schools that not nearly enough teachers had received this training and that it would be practically impossible to enroll them in typical ESMWT classes during the school year, because their homes were so widely separated that it was not feasible to organize classes of reasonable size. Therefore, correspondence courses were offered—a new departure in ESMWT. Nineteen strategically located institutions are authorized to conduct these correspondence courses, which appear to be quite successful.

An operating problem of continually growing importance throughout the two and a half years has been the procurement of a sufficient number of properly qualified teachers. Technical men from industry with adequate grounding in subject matter, but in many instances lacking practice in effective teaching methods, have constituted the principal supply of sorely needed additions to the regular institutional staff of instructors. Many of these men require supervision by regular staff members to insure that proper institutional teaching standards are maintained in all ESMWT courses. Some institutions have prepared manuals to help such persons in the mastery of acceptable teaching methods, and nearly every participating institution has conducted more or less formal training to assist these new teachers in their efforts to transmit the results of their experience to others.

Another operating problem, which has become especially serious recently, is posed by the wartime shortages of instructional equipment. Maximum use of equipment has been promoted by the design, wherever possible, of courses that could be given with instruments and devices already at hand; and by the timing of courses and staggering of class hours to make the most effective use of the equipment which was available. Finally, institutions with suitable shop and personnel facilities have been encouraged to build many items of equipment for ESMWT classes.

The recruitment of sufficient numbers of properly qualified women,

and men not liable for combat service, has become a major concern of ESMWT. The competition of multifarious attractive opportunities for profit, service, or adventure, and the dearth of women with adequate basic mathematical training have made recruitment difficult. To meet this situation, many war industries have selected young women and older men for professional and technical employment, placed them on payrolls, and assigned them to ESMWT courses where they received training, with pay, before entering on production work. The United States Civil Service has faced the necessity for this procedure, and there is a possibility that training subsidies now offered to ordnance and aircraft inspection trainees may be extended to those preparing to enter other fields of Federal employment.

Both the Washington office and the participating institutions have undertaken to recruit women for training through the use of newspaper, radio, magazine, and poster announcements calling attention to the opportunities for service made available through ESMWT courses. As any Registrar will instantly recognize, these efforts must continue and increase if sufficient numbers of persons are to be induced to enter fields in which they have traditionally been led to expect no opportunity, and with which they have only distant familiarity.

The steady depletion in the number of available trainees with satisfactory educational qualifications has increased the difficulty of fitting the courses to the trainees, and has called for great flexibility, adaptability, and ingenuity on the part of teachers and administrators in their never-ceasing efforts to maintain institutional standards while meeting the needs of industry and utilizing to their limit the abilities of the trainees under their charge.

That this challenge has been met seems clear from a study of 1,897 completed ESMWT courses made by the Washington staff in an endeavor to evaluate the effectiveness of instruction. The study shows that nearly 62% of those enrolled completed their courses satisfactorily. The highest proportion of successful completions was in physics courses, amounting to 67%. The lowest proportion of successful completions (57.6%) occurred among chemistry trainees. In engineering courses the rate of successful completion was 61.5%. The principal reasons for failure to complete courses were: Changed employment conditions, 8.5%; unsatisfactory work, 4.7%; and entrance on military duty, 3.2%. Other reasons, including sickness, poor attendance, excessive educational load, and failure to take final

examination, accounted for the remaining 21.7%. It is evident that these figures reveal no unhealthy tendency.

The colleges have been beset with the problems mentioned in this paper, and with many others, and have "taken them in their stride." They can well take pride in their contribution to the war effort, which has been tremendous. No one will ever know exactly how much ESMWT has expedited the national war effort, but there is no doubt that it has made a material contribution. This contention is borne out by the hundreds of letters received in the Washington office from industrial and governmental executives, testifying to the benefits derived from ESMWT courses by their companies or agencies. From the many concrete examples contained in these letters, citing specific cases of direct, measurable gain to the war effort, it seems evident that the training has already paid for itself many times over by helping to make possible faster, more efficient and more economical production of vital war materials—to say nothing of the many obvious *human* values which have resulted.

The college registrar, like all college administrators, has had to concern himself with the problems arising out of all the developments I have mentioned, and with many corollary problems, such as the difficulties inherent in the scheduling of crowded plant facilities to insure their most efficient use, and in the effective and equitable assignment of teaching loads, with the attendant personnel problems stemming from overtime pay or the lack of it.

A problem of very special importance to the college registrar in connection with ESMWT is that of academic records. In practically all colleges academic credit is at present *not* being given for ESMWT courses. This action of the colleges has been endorsed by the Engineers Council for Professional Development and by the National Advisory Committee, the Regional Advisers, and the Washington staff of ESMWT, in view of the specialized, intensive character of the courses and their objective of specific training for specific jobs. However, when the war is over and many of the present ESMWT trainees become candidates for college degrees, there is no reason why the knowledge and skills acquired in ESMWT courses should not be treated in the same manner as any other knowledge they possess. Demonstration of satisfactory knowledge of a subject to the proper college authority should lead then, as it does now, to the student's being excused from that subject, either with or without credit, regardless of where or how the knowledge was gained.

But in order properly to evaluate claims for credit, it will be extremely important that complete and accurate records be available concerning each course offered under ESMWT, and the performance of each trainee in the course. Such records are of direct interest and importance to the registrar. It should be his concern to be sure that the records in his institution are such that the record of any trainee in any course may be properly and intelligently evaluated after those who conducted the course have left the institution. It seems evident that the preparation and preservation of such records can very justifiably be considered as a proper element in the cost to the institution of conducting ESMWT courses.

The ESMWT program presents many problems and imposes many additional burdens and responsibilities on the participating colleges. The problems grow more complex daily, but are being solved as they arise. The burdens and responsibilities become more onerous as the war progresses, just as do the burdens and responsibilities of individual citizens. The colleges are rising to these new responsibilities just as most individual citizens are, and are wholeheartedly making most effective contributions to the national war effort.

Increased responsibilities are generally accompanied by greater rewards, and the colleges are receiving certain extra rewards for their labors in conducting ESMWT classes. Their first reward, of course, is the satisfaction of knowing that, as members of the home front, they are contributing materially to the hastening of victory. A less obvious, but I think quite as important, reward is the fact that the colleges are learning new techniques of course construction and of teaching, which are applicable to the education and training of large segments of our population which have heretofore been largely neglected. This will, I believe, result in greatly stimulating interest and activity in adult education after the war. Finally, the colleges are establishing closer and more cordial relations with industry and Government than have ever prevailed before, through the close cooperation which has been necessary in the development and conduct of ESMWT courses. This cannot fail to be of great value to the colleges, to industry, and to Government. In my opinion it constitutes the chief reward to the colleges for their unselfish and patriotic endeavors under ESMWT. But if we discount all these considerations, surely the participating colleges and the members of their staffs can all take intense pride in doing their full measure of wartime duty to their country and to men of high purpose everywhere.

The Functions of Physical Education in Higher Education[1]

LOUISE S. COBB

PITY the college or university president in a war-torn world! His problems are legion; the demands on his time and energy are limitless. The variety of decisions he must make is almost inexhaustible. There is no secret about this matter. Nor is there any doubt that the long-range outcomes of higher education depend in no small measure on the decisions that are now being made by administrators on the varied aspects of collegiate experience.

With all his other problems, a president is practically forced, by the demands and recommendations of the military services, to give no inconsiderable thought to the place of physical education in his institution. Probably no administrator is so shortsighted as to see the educational problems of today only in terms of the immediate demands of war. Each problem must be viewed also in terms of the peacetime world to come—in terms of those enduring values of our way of life that we have been fighting for.

And so the problem of physical education presents itself for serious consideration. The specialized demands of the armed services for the conditioning of young men for military service are probably being met by most higher institutions. But along with this conversion of physical education to wartime service, the old issues and conflicts over the question of physical education in higher education are still pressing for consideration.

Physical education also has been confronted with basic conflicts over its function in higher education. The purposes of physical education for young men and women in institutions of higher education have too often been superficially stated, with little regard for the unity of the human being, and with limited understanding of the role of higher education in American life. And further, physical educators have, perhaps, not always been aware of profound differences of opinion among college and university administrators about the place of these departments in the life of the institution.

[1] The point of view of this article is developed more fully in the author's *A Study of the Functions of Physical Education in Higher Education*, New York: Bureau of Publications, Teachers College, Columbia University, 1943. 176 pp.

The clichés and naive slogans so widely used in describing the purposes of these programs not only have obscured the technical outcomes that are possible, but have quite systematically diverted attention from the interrelationships between the purposes of physical education and those of other departments and officers of an institution. It is, therefore, highly desirable to identify the sources of conflict in the thinking about the functions of physical education at the college level, and to be aware of the implications of the varying views.

Physical educators themselves exhibit a wide range of expressed opinion and purpose. The penetrating insight shown by some college physical educators about the nature of their subject in meeting the needs of youth today is matched by the smug complacency with which others claim outcomes that a most elementary knowledge of the facts would contradict. Any failure of physical education leadership in higher education to give full consideration to the problems perplexing higher education, the cultural needs of young people of college age, and the social forces shaping all human institutions is indeed serious.

General administrators and physical education personnel alike, then, must be aware of the unique function that physical education is to serve in the college. There is little assurance that physical education will play an effective part in college education unless the administrator can count on this special field as a means of helping him and his colleagues realize the larger aims of the institution. Such a mutual understanding should materially reduce ineffectual practices based on inadequately conceived aims.

Whether it is health or character or preparation for leisure that is under discussion as an objective—and these have been claimed more frequently than any others—there is a wide range of opinion as to their significance and even as to their meaning. In some cases the functions stated for this work seem to have been picked out of the thin air, with no relation to the life or purposes of an institution. In other cases, the suspicion is very strong that no conscious purposes have been formulated for the work, and the leadership does the best it can when suddenly confronted with the question. Again, a carefully considered institutional policy has either rejected physical education as a legitimate aspect of higher education, or has set it importantly close to the center of the educative process.

As one studies the literature and considers the various and diverse

views expressed concerning the place of physical education in higher education, it is clear that at least four possible basic positions emerge. These are:

1. There is no place for physical education in higher education.
2. Physical education is for the maintenance of health in order that students may carry on their intellectual work with the least strain.
3. Physical education should develop students physically, mentally and morally. (Note the mind-body dichotomy implied in this type of statement.)
4. Physical education should contribute to the growth of the individual as an integrated personality by discovering the health and recreational and personality needs of each student and helping him to meet these needs through the activity program.

The time has come, indeed, to consider what has brought about these contradictions, and in what direction lie the wisest choices for the future. Fundamentally, of course, in a democracy there will always be differences in the nature of institutions and in their purposes. And with their differing philosophies will go varied practices. But this is quite a different matter from drifting, or from accepting traditional statements without understanding their meaning in relation to the circumstances that gave rise to them, or from holding unrealistic objectives through lack of investigation as to their validity.

Whether there is a need for physical education in higher education depends, then, on the nature of higher education. Who are its students? What is it seeking to achieve? How is it seeking to serve its purposes in American society? Out of the educational ferment of recent years two contrasting positions on these questions may be identified. These are:

A. Higher education should be conducted for a selective group, for the development of the intellect, through detached consideration of the great truths in the history of knowledge. This position may be called "intellectual."

B. Higher education should be available to all who wish it, to develop all the powers of the individual that will contribute to effective living in a democracy, through the relating of learning experiences to significant areas of current life experiences. This position may be called "functional."

Between these two positions there are, to be sure, many intermediate points at which individuals would place themselves. But

these serve the purpose of accentuating the root of the problem. It is quite clear that an institution operating under the assumptions of the "intellectual" position will have quite different ideas about physical education than will an institution maintaining the "functional" position.

President Hutchins cries out against the view which considers the university as "in some way responsible for the moral, social, physical, and intellectual welfare of the student." He says this "is hard on the universities, for, besides being expensive, it deflects them from their main task, which is the advancement of knowledge."[2] President Gideonse, on the other hand, holds that "formal education should begin to think of other-than-intellectual aspects as a major part of its responsibility."[3] He further states that physical education offers great and immediate opportunities for co-ordination with a general program. MacLean, when he was director of the General College at the University of Minnesota, took the temperate position that "physical education has an important, but not too important place in [college] general education. It must not be led astray by the will-o'-the-wisp of increasing leisure time into any delusion of grandeur concerning itself."[4]

To those who hold that the "intellectual" position described above is the proper one for higher education, it is logical to conclude one of two things: *first,* that there is no place for physical education in higher education, or *second,* that physical education has a definite, but limited, place in higher education. In this latter case, its function would be to provide regular exercise, to enable students to maintain their health or fitness to carry on the classroom studies.

To those who hold the "functional" position, on the other hand, the situation has quite a different aspect. Education for the *many,* education for the development of the whole personality, and a functional relating of educational experiences in the institution to the life of the community—these factors indicate the need for an effective physical education for college students. Differences in physique, in emotional maturity, in leisure-time skills and resources, and as a matter of fact even in life orientation—great differences are

[2] R. M. Hutchins, *No Friendly Voice,* Chicago: University of Chicago Press, 1936, p. 82.

[3] H. D. Gideonse, in *Proceedings,* Institute for Administrative Officers of Higher Institutions, Chicago: University of Chicago Press, 1938, p. 72.

[4] Malcolm MacLean, in *Journal of Health and Physical Education,* Nov. 1936, p. 590.

found among students in all these things, as well as in their intellectual abilities. All these things, too, are the concern of higher education when it subscribes to the policy of developing all the powers of the individual to their optimum, for life in a democracy. It is obvious that this kind of education has real need for a physical education that is vital and informed, and that is based on individual needs.

The issue whether physical education should be included in higher education depends for its solution on how the colleges regard their functions of educating young people in current American life. The fact must be faced that certain points of view lead logically to the position that physical education is either unnecessary or unimportant. Other points of view indicate that physical education is an essential and integral means of advancing the purposes of institutions that are sensitive to our life and times. It is difficult to see how anyone can deny that if the values we most deeply cherish are to survive, higher education must be increasingly geared in the latter direction.

It was stated above that the most frequently named objectives of physical education had to do with (1) health, (2) preparation for leisure and (3) "character" or "personality," and that there is considerable dispute and confusion over these. The story of the historical background out of which these functions evolved at the college level is an interesting and enlightening one. Limitation of space prevents relating here some of the details that are of special interest.

In regard to health, however, it may be said that the first college department of physical education was established at Amherst College in 1860, with a physician in charge, to care for the health of students. This formed a pattern that was followed by many other colleges in the succeeding years. In women's colleges as well as in men's, exercise, usually calisthenics, was provided for its health benefits.

The difficulty that has arisen over this objective is due in no small measure to a widespread failure, until recently, to define health and to understand the role of exercise in health. The relationship is readily taken for granted by the lay public. The early medical men in physical education naturally assumed it, because of the nature of their assignment and the educational problems of that day. More recently, physical educators, too, have held convictions on this subject without, in many cases, defining their terms. Some accepted responsibility for health when they used the 1917 draft army statistics

on health defects, to insist on the need for expansion of departments of physical education. This proved to be a disservice to physical education when the 1940 draft rejections were widely attributed to an inadequate activity program. Moreover, few of the ardent advocates of health through exercise make the claim that difficulties of eyes, teeth, hearing, and most of the other major bases for rejection could be corrected through exercise. And the pendulum has almost completed its swing, with the increasing body of opinion from medicine and from physiology that there is too indiscriminate a stress put by Americans in general and by physical educators in particular on the need for exercise.

When health is defined as freedom from disease, it is the doctor's province, and physical education will let it alone. The belief that exercise will prevent colds and other infections should no longer be encouraged by any professional person.

When to be healthy means to be "physically fit," it comes nearer to the physical educator's responsibility. Vigor and vitality can, indeed, be built up in normal individuals through proper exercise. It is at once apparent, however, that this view is lacking in important mental, emotional and social connotations. The athlete or soldier may surpass his competitors in his physical fitness but fail because of his mental or social orientation.

A third view of health is derived from the position that man is a unity, that what he does is not only an expression of the whole but also an effect upon the whole. Williams'[5] expressions "Health flows from life" and "Health results from living in the proper way" are typical of this concept. The view of health as an expression of the whole organism gives an appropriate emphasis to mental hygiene and development of the personality. This view of the whole person as a functioning organism finds approval not only in physiology and psychology but also in psychiatry and endocrinology. The deep distress that is popularly felt over the increasing numbers of patients in hospitals for the mentally ill, and the keen interest that is shown in the evidence that health disturbances are brought about as frequently by emotional as by physical causes, are signs that a wider public is accepting a "total" concept of health. Since disturbances of either the body or the mind affect the total organism, it is not possible to think of health, except in terms of both. Freedom from worry and

[5] J. F. Williams, *Personal Hygiene Applied,* 7th ed., Philadelphia: W. B. Saunders Co., 1941, Chap. I.

undue tension are now recognized to be as important as physical factors in the maintenance of health. Nutritionists, dentists, psychologists, physical educators, then, and all who feel a responsibility for any aspect of the health problems of youth need, it appears, to see the question as a whole. That good health can be achieved through cooperative undertakings of many specialists seems more sound than that any group should give an impression, however unintentional, that all health is its province.

There are implications in this view of health for the whole college administration and faculty. It is important for all persons who deal with students to be aware that certain affective factors considered typical of American life are equally typical of college life. Far more anxiety and worry exists among students than was formerly suspected. Rush, excitement, fatigue, boredom all play their part. There is no such thing as good health where the sharp buffeting of daily experience finds the student without an adequate personal philosophy.

It is encouraging to find that some students have a very adequate philosophy of life. They have a sense of values that is straight and clear. They plan their time well. They eat and sleep sensibly. They have developed skill in some pleasurable form of exercise and arrange time for play in their schedules. And they face their daily tasks with serenity and courage. But on the whole, fewer do these things than one might wish. It has taken colleges so long to recognize the need and to plan adequately for the health of students.

The responsibilities of physical education for student health are varied. Physical education can build attitudes favorable to wholesome activity. It can provide instruction in activities that are realistically related to the life of today. It can instruct students in motor skills they enjoy. It can facilitate participation by administrative regulation. Further, it can take the initiative, where initiative is needed, in interrelating its services with those of the rest of the institution, for the improved health of students.

There are other factors in the picture, too. For example, many college students are disturbed by the assumptions of some of their teachers that exercise of some kind, however dull or distasteful, is "good" for them. Experience seems to favor the opinion of the students that activities of an enjoyable, natural kind have values not even remotely attainable by routine, meaningless exercise. Further, physical education can teach students to avoid the kinds of activity

that are not well suited to their strength and condition. And it can study further the complicated problems of relaxation and rest in relation to exercise and fatigue. Perhaps in addition to the muscular development and motor skills that reduce certain kinds of strains, a major contribution from this field may be made through fostering attitudes of play in which activity is pursued for its own sake and the ardent strivings of a complex world are softened and smoothed by the dramatic and expressive activities of dance and sports.

College physical education can, then, contribute to a way of life that is best described as healthful. In the light of the evidence about the physical and the affective factors that make for health it can hardly be denied that it should do so.

The issues over preparation for leisure and over character or personality development as functions of college physical education must be dealt with here more briefly. But the implications for education that flow from this way of looking at health will be found also in the consideration of these other usual purposes of physical education.

When the Methodists "wisely banned play in any form from their colleges" in 1792, they were acting in accordance with the temper of the times in which they lived. By the 1940's the scene has shifted. Sociological studies and youth surveys of the past decade have demonstrated how thoroughly sports and recreational activities have become a part of American life. Inadequate opportunities for recreation were rated by youth second only to unemployment as a major factor in their lives.

The quite general acceptance of play and recreation is relatively recent. And so there remain great gaps in American culture where the significance of leisure and of education for its use is not quite clearly grasped. The college curriculum is too often representative of traditional concepts of culture or devoted to narrow vocational purposes. In either case, learning how to live today is overlooked in the search to discover how men lived formerly, or in the harsh realities of a competitive, commercialized civilization.

Educational leadership is everywhere confronted with the problem of education in the use of leisure time. One college president, worried about athletics and social activities, exclaims that the college should not be a country club or a summer resort. On the other side, another president declares that nothing that is of interest or worth to the

people of a state is beneath the dignity of a university. And so the old controversy of intellect versus the whole man now starts again in a new setting.

There is no general agreement in physical education that the leisure objective is fundamental. Opposition to this objective is found among two kinds of groups. The first is made up of people who seem to be unaware of the need of man for expressive activities engaged in for no ulterior purpose, and who fail to apprehend the play of social forces on the biological materials of man. Although the teachings of modern sociology and psychology are readily available to college faculties, the members of the first group speak the old language of the individual *and* his environment; they know little of *wants,* and seem to care more for administrative processes than for the challenges to personality in a profound social and economic cataclysm.

The second group rejects the recreational aim more forthrightly. They tend to agree with one of their spokesmen who wrote recently expressing great satisfaction that physical educators were "coming to their senses" in stressing health and fitness rather than recreation and character objectives. This, when it is common knowledge that thousands of young people enter college every year lacking recreational skills and resources to bring them satisfaction.

Some college youth do not need instruction in recreational sports. They ride horseback, play tennis or golf, swim and skate. They hunt, fish, hike, and camp, at least, they do some of these things. They have the opportunities, the skills, the interests, and the equipment. But these youth are distinctly in the minority. In this serious shortage of youth's leisure education physical education finds itself too often engaged with old purposes and conducting traditional programs. This is as true of the secondary school as of the college, and indicates an even larger problem than at first appears.

Preparation for leisure has, as a goal of higher education, many facets and must count on many departments for its fulfillment. The unique contribution of physical education departments in preparation for leisure will mean several quite definite things to college students. They will learn skills beyond the novice stage in some motor activities that there is a reasonable chance of their using for many years. They will learn a minimum number of activities that they will probably seldom engage in, in later life—vigorous group activities in the main—for the sheer joy and challenge of hard physical endeavor and keen competition. This can be recreation at the college

age. They will acquire skill and knowledge of a variety of activities that people enjoy watching together: football, baseball and tennis all have a place in this. They will acquire an appreciation of skillful and artistic performance, which will reflect itself in standards of their own participation and of their appreciation of the performance of others. They will also, if it is so planned, gain an understanding of the significance of these activities in our life and times, and they will wish to play some part in extending such opportunities in their own communities. If the spirit and meaning of recreation are made vital to students through their own experience in college, changes in the quality of life throughout the cities and towns and rural areas of this country might well in a few short years be actually measurable.

What, now, of character as an objective of college physical education? There is good reason to believe that physical education can be used very effectively as a tool to educate for any kind of personality a group may really want to develop. History offers many striking examples. Athens, Sparta, Rome; Italy in the 1920's and Germany more recently—these states, ancient and modern, illustrate the use of physical education for just this end. There are disturbing implications in these illustrations. They give pause for thought because of the spirit of force that is loose in the world, on the one hand, and because of the contradictory picture of the outcomes of sport, on the other.

Perhaps in physical education one of the difficulties has been a tendency to list a variety of specific traits, ranging from "sportsmanship" to "obedience," as outcomes of the program. The difficulties in the way of effective character education under such a plan are almost insurmountable. When certain traits, almost countless in number, comprise the items to be summed up in character, then the highly variable behavior of man in relation to changing situations cannot be understood, and the educational effort is lost in a maze of specific reactions.

The newer view is that youth must be helped in building a *framework of values* consistent with the democratic conception of life. Personality is now seen, "not as a sum of biological and social factors, but rather as a product of their interaction."[6] How then, must we look at the question if we would deal with personality so conceived. What is to take the place of building many separate traits? What kind of integration is possible? Allport has proposed that the integra-

[6] R. S. Woodworth, *Psychology,* 4th ed., New York: Henry Holt and Co., p. 191.

tive factor in a mature personality is a unifying philosophy of life.[7] This concept of personality which takes into account attitudes, interests and the highly varied reactions of the individual in the conflicting scene of human experience finds considerable support in the view that good health and vitality are definite factors in morale. This interpretation takes into account the fluctuation of behavior in relation to physiological condition. On the strength of this interrelationship, the physical conditioning of the individual becomes important. It can be justified in higher education for life worthily lived. It cannot be justified as merely brute force or selfish irresponsibility. Germany is showing us all too clearly the results of superb physical conditioning run amuck.

American college physical education and athletics have not been entirely free from shady practices as well as from apathy in this matter of character or personality development. Perhaps a most important implication at the moment is that it is dangerous *not* to have this as an objective. Looking back at other civilizations, and looking at the world today, we may well be troubled at a physical education that builds strength and vitality and aggressiveness, without sustaining ideals of cordial and helpful relationships with one's fellow men. With an understanding of the unity of man, we may not leave physical development to the gymnasium and playing field, and hope that someone else in higher education will deal with the question of what these things are worth in the kind of world Americans want and believe in. It would be presumptuous to believe or to expect that physical education can do the job alone. As an integral part of a total college plan, its contribution may be clearly significant.

"To make education significant in actual social living is the prime purpose of teaching."[8] This is the point of view—the bias, if you will—of the writer. It is contended that it serves well as a general orientation for a worth-while physical education program.

From this point of view, and from a study of the controversial issues that have confronted presidents and deans and physical educators, several general inferences about the functions of physical education in higher education stand out clearly.

1. The controlling factor in determining the position one takes regarding the functions of college physical education is found in the

[7] G. Allport, *Personality,* New York: Henry Holt and Co., 1937, p. 214.

[8] Donald P. Cottrell, in *The Study of College Instruction,* 27th Yearbook of the National Society of College Teachers of Education, 1939, p. 17.

way educators view human beings. Where they see dualisms of mind and body, or of organism and environment, biological objectives seem adequate. Where they grasp the meaning of the unity of the individual, the thinking about functions of college physical education is redirected into more significant demands.

2. There is no education except self-education. Administrators, then, might look to see whether young men and young women are self-propelling in their physical education interests. Or do students simply comply with a time requirement without ever quite having their hearts in it?

3. The criticism is often made that higher education is so fragmented and departmentalized that students fail to see, with any sense of unity, their own lives and the world in which they live. Administrators might well consider whether the college or university is so oriented as to encourage students to formulate a philosophy of life for themselves. Do students, then, see the values of physical education related to their own larger life goals? This is crucial if permanent good is to come from the time and money, thought and energy, that it costs.

4. A sensitiveness to our life and times does not universally characterize college physical education today. Moreover, the larger implications of higher education, and the place it holds in modern life are all too frequently unknown. Physical education conceived merely as exercise and insensitive to the persistent problems of the modern world fails to make its full contribution; physical education that plays its part co-operatively in furthering the purposes of the institution is a vital force that may well prove indispensable.

5. Many ill-advised and uninformed statements about health, character, and preparation for leisure appear in the literature as objectives of physical education. The administrator may well question such general claims in his own institution and examine them with some care.

6. Where there is not a clearly-thought-out statement of functions for a college department of physical education, the existing program itself is a very subtle factor in their determination. This is no minor matter. The outcomes for students are inherent in the experiences they have. Only as these experiences are selected in relation to worthy and attainable goals and purposes can the functions of physical education be realized.

7. A final implication for education is that college is too late for

maximum enrichment of life through physical education if the early years of individual development have been inadequately cared for. The soundest development of the program at the college level depends upon improvement in the physical education of high school students. Moreover, the great majority of the 90 per cent of young people who do not enter college have little opportunity to make up these deficiencies. College physical education departments may well play a large part in this, particularly, perhaps, through ever better preparation of teachers and lay leaders who see the larger social problem involved.

In conclusion, it seems clear that the fourth of the points of view given above about the place of physical education in higher education is the most fruitful and is fully justified. The statement was this: *Physical education should contribute to the growth of the individual as an integrated personality by discovering the health and recreational and personality needs of each student and helping him to meet these needs through the activity program.*

It is clearly impossible for any department to be solely responsible for such objectives as these. No one of them is attainable through any single department; no one of them can be fully realized in an institution where different departments operate at cross purposes with respect to needs that are simple and unified in the lives of students. Working together, the various forces of college and university life may realize in the lives of students the full function of physical education in higher education.

Instructional Salary Costs per Student Credit Hour

ROBERT OSBORNE BAKER

COSTS—like death and taxes—are inevitable. No organization can long survive whose executives permit continued dislocation betwen the quality and the selling price of the organization's product. Costs are a prime factor in determining the success or failure of an enterprise.

Even educational institutions are not immune. Of all the places where costs ought to be understood and appreciated, usually they are here least understood and their importance most underestimated. The average faculty member, department or division chairman, and, in too many cases, the chief administrative officer, have little conception of the importance of costs and their effect upon the character and the quality of the institution's educational program. Like Caesar's ghost, costs have risen up to plague many a university president.

Universities are service institutions—institutions designed to provide educational opportunities for their clientele. The benefits accrue not only to the clientele, but also to society as a whole over succeeding long periods of time. However lofty and intangible the purposes and products of universities may be, costs play an extremely important immediate part in their continued operation. Unless costs correspond with the quality of the work, the actual selling price of the education increases or, as too often happens, the quality becomes inferior. The problems of cost directly concern the character and the quality of the services performed.

Instructional or teaching costs are the largest single expense item of an educational institution, closely approximating sixty per cent[1] of the total costs.[2] Since instructional cost constitutes the chief

[1] Reeves, Russell, Gregg, Brumbaugh and Blauch, "The Liberal Arts College," (University of Chicago Press, 1932), page 505. The percentage at the University of Kansas City has been 57 per cent, 60 per cent, and 63 per cent, the past three years. Also see "An Analysis of Financial Data of the Higher Institutions of the Association for the Fiscal Year 1939-1940", *The North Central Association Quarterly* (Vol. XVI, No. 4, April, 1942), page 437.

[2] This percentage and total costs at the University of Kansas City include only the "general and educational expenses", thereby excluding all expenditures for capital purposes such as new buildings and equipment, library books, etc., and for auxiliary enterprises.

expense in providing the educational service, it is proper that university people should have a thorough knowledge of the facts and the problems involved.

Institutions of higher learning for administrative purposes measure their services in terms of courses, to each of which has been attached a unit value tag. They do not measure their product in terms of dozens, grosses, long tons, or carloads, but in units of *student credit hours*. However much it fails to gauge ultimate values, this basic unit of student credit hour is used by educational statisticians in making their studies. It is used because as yet we have devised no better scheme for evaluating our operational procedures.

The semester hour is the usual measurement of college credit—one hundred twenty of them adding up to a college education. *Student Credit Hours* are the total number of credits made by the students in a class. It is computed by multiplying the number of students in the class by the semester credit hour value of the class.

PURPOSE OF THE STUDY

Instruction in small groups, in many instances, leads to the uneconomical use of physical plant facilities, the duplication of classroom equipment, and often to a waste of the energies and time of instructors. Nevertheless, whatever the number of enrollments, certain classes must be given each time on schedule in order that the students may complete their major or specialized requirements. Many college administrators feel that some classes must be given, even with small enrollments, so as to present a well-rounded departmental academic program or must be included in the offerings for their general educational value. In some universities, such feeling equally applies to the maintenance of certain high-cost services (say courses in ancient languages or in advanced research) as well as to specific classes in the better-established (and therefore low-cost) departments.

The purpose of this study is to determine (1) the comparative operating financial efficiency of the various departments at the University of Kansas City in contrast with former years and previous semesters, (2) to discover which departments were over-staffed compared with previous semesters, and (3) which departments were offering courses in excess of student demand or requirements as compared with previous periods. A further purpose is to determine the over-all salary instructional cost to the University—the combined cost of departmental offerings. By comparison of this over-all figure with

previous periods, the trend in instructional costs at the University can be seen.

It is first of all necessary to ascertain the number of students in every class or section at the University in order to compute the number of student credit hours taught. For this study, the enrollment figures soon after the beginning of each semester are used: for the first semester, the actual class enrollments on October 15; and for the second semester, enrollments on March 1. A computation of the number of student credit hours is made for each class or section, by instructors and by departments. An instructor's total number of student credit hours is then used as a divisor. By dividing the instructor's salary for the semester by the number of student credit hours, the unit cost per student credit hour is determined. By consolidating the number of student credit hours taught in a department and the semester's salaries paid to the department's instructors, a unit cost for the department is found. Finally, by a further consolidation of all student credit hours taught and the salaries paid for the semester to all instructors, a unit cost per student credit hour for the whole university is ascertained.

THE RESULTS

Table I below shows the average cost per student credit hour for each teaching department of the University of Kansas City. The information is set out separately for the first and the second semesters of the 1940-1941, the 1941-1942, and the 1942-1943 academic years, and the first semester of the 1938-1939 academic year.

There is an almost consistent increase in cost of each semester in 1942-1943 over the corresponding semesters of the 1940-1941 and the 1941-1942 academic years. It is expected that the costs for the second semester would be slightly higher than the first semester. Student enrollment decreases in the second semester without a corresponding drop in the number of faculty members. A decrease in enrollment for the second semester is a normal phenomenon and educational institutions plan to the best of their ability to adapt their programs accordingly.

The number of faculty members can be decreased through elimination of classes or sections from the academic program, or by increasing the number of classes taught by a reduced staff. Frequently this can not be done immediately because of commitments previously made with instructors or the necessity of continuing certain courses so that upper-class students may finish their programs.

During the past four years, the student credit hour cost in the School of Law has shown a consistent increase each semester over the preceding semester. Student enrollment in the School of Law has been steadily declining, but the decrease had not reached a point where it was possible to make the proper eliminations of classes or sections. Because of the uniform curriculum requirements for Law

TABLE I

INSTRUCTIONAL SALARY COSTS PER STUDENT CREDIT HOUR, THE UNIVERSITY OF KANSAS CITY, KANSAS CITY, MISSOURI

	First Sem. 1938–1939	First Sem. 1940–1941	Second Sem. 1940–1941	First Sem. 1941–1942	Second Sem. 1941–1942	First Sem. 1942–1943	Second Sem. 1942–1943
Department							
Art	$ 7.00	$ 5.43	$ 4.96	$ 8.42	$ 7.31	$10.98	$ 6.61
English	4.33	4.78	5.77	5.41	5.46	7.51	8.82
Languages, Foreign	5.17	4.00	4.91	4.21	5.67	5.40	6.93
Music	13.06	5.67	6.06	7.67	10.35	14.04	13.00
Philosophy	7.88	9.28	5.80	8.59	10.50	17.04	18.38
Biology	5.46	3.89	5.05	3.09	4.80	4.69	4.65
Dietetics	3.85	2.29	3.04	2.38	3.68	3.01	3.26
Physical Education	13.66	9.16	14.49	11.36	9.94	15.77	9.86
Psychology	5.26	3.56	4.08	5.06	4.56	4.27	4.89
Mathematics	4.73	3.52	5.40	4.35	4.11	4.56	5.10
Chemistry	6.78	5.88	7.45	5.26	10.19	4.50	6.11
Geology-Geography	7.68	6.62	6.85	6.09	10.28	7.08	15.89
Physics	5.93	3.68	6.21	6.17	5.29	3.16	5.66
Economics	4.57	4.11	5.83	4.95	6.54	5.40	6.83
Education	6.85	10.75	7.72	7.56	7.18	7.19	5.73
History	3.61	5.08	4.57	6.00	5.35	6.53	7.02
Sociology	4.81	3.73	4.87	4.65	5.14	6.83	4.72
Secretarial Studies	—	4.55	3.70	6.94	3.03	5.77	4.44
Law, School of	4.20	6.07	6.56	7.61	8.56	13.98	16.82
Averages							
Liberal Arts	5.60	4.51	5.37	5.03	5.99	5.97	6.70
School of Law	4.20	6.07	6.56	7.61	8.56	13.98	16.82
Entire University	5.37	4.67	5.50	5.27	6.20	6.39	7.11

students, many classes were given for a small number of students in order that they might be able to finish their program of required classes.

Temporary over-staffing is apparent in a few departments of the College of Liberal Arts. The trouble here was caused primarily by unforeseen enrollment decreases together with a shift of students' interests from one department to another. Because of the Selective Service Act and the activity in defense plants in Kansas City, arising after faculty contracts for the 1941-1942 academic year were issued,

it was not possible to reduce the teaching staff to the point that the actual enrollment in September, 1941, justified, compared with 1940-1941 and previous years.

Likewise, it was not possible to budget accurately in advance the departmental staff requirements for the academic year 1942-1943.

Decreasing enrollment, and therefore the number of student credit hours taught by the faculty, has been the cause of the increased costs usually found. A few departments, such as mathematics, physics, and physical education, showed an abnormal and unexpected decrease in cost for the second semester over the first in the 1941-1942 academic year. This decrease in cost can be traced directly to the government's war program. Candidates for various branches of the armed services were required to have certain courses, particularly in physics and mathematics.

The decreased cost in the Department of Physical Education arose from an increased enrollment in the department caused by a change in the University's policy. Beginning with the second semester, 1941-1942, all students under 21 years of age were required to enroll in physical education. A further extension in physical education requirements was made one year later at the beginning of the second semester, 1942-1943. Thereafter all male students under 21 years were required to enroll for 2 credit hours of physical education each semester instead of the previously required ½ credit hour. This is a happy instance of the effect of policy on finance, but it indicates a problem often forgotten both by the faculty and administrative officers. It is easy enough to vote a change in educational policy in a faculty meeting. It is not so easy always to justify the action on financial grounds or to protect the University's general financial position.

A word of caution is necessary. In interpreting departmental student credit hour cost figures, a high cost does not necessarily mean salaries are too high. It more likely means that the department is over-staffed in comparison with the other departments and, as a consequence, more classes are being offered than student demand justifies. On the other hand, some departments tend to have high costs. Because of sharper competition between private enterprises and educational institutions for the services of staff members in certain fields or professions,[3] instructional costs are likely to be higher in

[3] Educational institutions must bid against each other as well as against private industry and government for services of doctors, lawyers, dentists, engineers, scien-

these fields than in those where competition is less active.[4] Only an examination of the basic data on the distribution sheet, class by class and instructor by instructor, can reveal the true facts and provide the information for the correct interpretation.

METHOD OF PROCEDURE

Tabulation: A tabulation sheet is set up to show every class or section taught by each instructor in all departments of the University. The separate classes or sections taught by an instructor are the basic data unit.

Extension and Distribution: When the exact semester's enrollment in each class is found, the information is transferred to a specially designed distribution worksheet. This sheet shows the number of students in each class, the credit hour value of the class, and the student credit hours taught in each class by the instructor.

Computations: The first step is the computation of the number of student credit hours in each class or section. Whenever an instructor teaches in two or more departments, his classes are tabulated and set up under the proper department. In a case of this sort, his semester's salary is also distributed proportionally to each department according to the number of credit hours taught in each.[5]

Distribution of Salary to Each Class: Instructor's salaries for the semester are distributed to each class according to the credit valuation of the classes involved. For example, Mr. Doe is paid his semester's salary for teaching five 3-hour classes having a total value of 15 semester credit hours. One-fifth (1/5) of the salary should be distributed to each class regardless of the number of students in the class. Mr. Smith teaches classes having a total value of 14 semester hours, consisting of two 3-credit hour and two 4-credit hour classes. The first two classes, then, should each be charged with 3/14 of the total salary, and each of the last two classes should be charged with

tists and, at present, specialists in certain fields of the social sciences such as economists, accountants, etc.

[4] For example, teachers of Latin, English, languages, history, etc., where competition is almost entirely between educational institutions.

[5] In cases of administrative officers doing part-time teaching, their salary cost was proportionally assigned to the departments concerned on an assumed full-time loan basis of fifteen semester hours. For example, if the Dean taught three semester hours, one-fifth of his semester's salary would be assigned to teaching costs. However, when an administrative officer's salary was in excess of that of the highest paid full-time faculty member, the teaching salary cost to the department was computed in these instances at the rate of the highest paid full-time teacher.

4/14 of the total semester's salary. In the case of Mr. Jones, teaching a total of 14 hours in two departments, 10 credit hours (two 3-hour courses and one 4-hour course) are in Economics and 4 credit hours (one 4-hour course) are in Sociology. Consequently, ten-fourteenths of the total semester's salary is assigned to the Department of Economics and four-fourteenths assigned to the Department of Sociology. Of the ten-fourteenths assigned to the Department of Economics, 3/10 of the amount should be charged to each of the first two classes and 4/10 should be charged to the third class.

Computation of Student Credit Hour Cost: After the gross cost of each class has been determined, the next step is to compute the cost per student credit hour. To determine the cost per student credit hour for the class, it is necessary to divide the gross salary cost by the number of student credit hours in the class. For example, 214 Economics (section A) has 51 student credit hours, and the gross salary cost to the University for giving this class is $300.00 for the semester. Consequently, dividing the cost by the number of units gives a unit cost of $5.88—the instructional salary cost per student credit hour for this instructor. The departmental cost is determined by taking the total salaries assigned to the department and dividing this figure by the total student credit hours produced in the department.

A student credit hour cost for the entire university is determined by separate summation of the salaries and the student credit hours.

By proper selection of data from the distribution worksheet, various combinations can be made to compute other student credit hour costs which might prove significant. For example, the instructor, department, or over-all student credit hour cost might be obtained for lower division (Freshman-Sophomore) classes, or for upper division (Junior-Senior) classes, or for graduate classes.

The Prediction of College Success—A Summary of Recent Findings

GLENN W. DURFLINGER

SCARCELY a study on scholastic prediction is made that does not include some intelligence or college aptitude test. The Army Alpha was used first and for many years. More recently the universities and colleges have been using intelligence tests which were developed particularly for the college population. The American Council on Education prepares for many colleges over the nation a college aptitude test of the highest merit. The College Entrance Examination Board and the Teachers College Personnel Association have also been in the test constructing field for several years.

GENERAL APTITUDE TESTS

One of the most interesting phases of the review of the literature upon prediction studies is to compare the results of summaries that have been made of the correlations found between college grades and various prognostic measures.

Harl R. Douglass[1] made one of the first and most complete of these summaries in 1931. He found over 250 such correlations and computed the median of all for each prognostic measure.

L. B. Kinney[2] compiled another summary of prediction studies in 1932. Many of his studies duplicate those of Douglass. It is interesting to note, however, that the median correlation between college grades and intelligence which he found is .445 and that Douglass reports a practically identical median of .45.

David Segel[3] working under the United States Office of Education in 1934 compiled another similar summary which contained duplicates of those found in the two previously named summaries. He found 100 studies on intelligence and college marks and his median for all of these is .44 which again is practically identical with the median Douglass found.

[1] Harl R. Douglass, "The Relation of High School Preparation and Certain Other Factors to Academic Success at the University of Oregon," Eugene: University of Oregon Press, 1931.

[2] L. B. Kinney, "A Summary of the Literature on the Use of Intelligence Tests in Colleges and Universities," *University of Minnesota Committee on Educational Research,* Minneapolis: University of Minnesota Press, 1932.

[3] David Segel, "Prediction of Success in College," *U. S. Office of Education, Bulletin No. 15,* Washington, 1934, pp. 59-61.

Mazie E. Wagner[4] compiled another summary in 1934. Her summaries however are listed under the tests used. The median correlation between college grades and the Army Alpha she found was .37. For the Otis. S. A. the median was .43 and for the Terman Intelligence Test .39. For the College Entrance Examination Board Aptitude Test the range is from .41 to .55. The Ohio State University Test and college grades give correlations of from .43 to .52. The A. C. E. Psychological Examination and college averages range from .17 to .81 with the median between .40 and .50. The median for the Thurstone test is between .38 and .52. A summary of all would place the median between .40 and .50 where the other summaries place it.

Since 1934 there have been no similar summaries that have come to the attention of the writer; therefore, the literature has been scanned for the individual studies reporting correlations between intelligence and college marks since that date. These are summarized in Table I. Table II compares the findings of the various summaries. An inspection of this table reveals that a median of .45 for the relationship between college grades and intelligence is approximately correct for all three earlier studies but the median of the forty-seven correlations reported since 1934 and summarized in Table I is .52. There is a significant difference betwen these two medians. The more recently reported studies find somewhat higher correlations between college grades and intelligence test results than did the earlier studies. These higher correlations may be accounted for by one or more of the following reasons:

1. The newer intelligence tests, being designed primarily for college students, may measure more of the factors present in scholastic grades than did earlier tests.
2. College instructors may be using intelligence test results to assist them in arriving at the grades awarded to students.
3. College marks may be based upon course examinations and requirements which have a closer relationship with intelligence than was the case a decade or more ago.

The 1934 edition of the Teachers College Psychological Examination was correlated with grades for the first two quarters of 326 freshmen entering Colorado State College of Education.[5] This corre-

[4] Mazie Earle Wagner, *Prediction of College Performance,* Buffalo: The University of Buffalo, 1934, p. 59.

[5] J. D. Heilman, "The 1938 Report of the Co-operative Testing Program of the Teachers College Personnel Association," Greeley: Colorado State College of Education, 1938, p. 12.

lation was found to be .576 ± .025. This is significantly higher than the median correlations of the summaries between the same two variables. It may be that this T.C.P.A. psychological test is a better

TABLE I

SUMMARY OF CORRELATIONS BETWEEN INTELLIGENCE AND COLLEGE GRADES REPORTED SINCE 1934

Investigator	Institution	Tests	Criterion grades	r
Butsch	Marquette U.	Thurstone	First Sem.	.46, .47, .47, .49, .49, .52, .52, .53, .53, .53, .53, .54
Constance	Oregon U.	A. C. E.	Under grad.	.48
Durflinger	Nebr. Trs. Col.	Trs. Col. Personnel Ass'n.	First sem.	.41 men .51 women
Gladfelter	Temple U.	A. C. E.	First year	.52, .57, .59
Hanna	Wash. Sq. Col.	Coop.	College	.49
Hepner	San Diego St.	A. C. E.	First year	.41
Heilman	Colo. St. Col.	Trs. Col. Personnel Ass'n.	Two quarters	.58
Heilman	Colo. St. Col.	A. C. E.	Two quarters	.62
Kriner	Penn. Trs. Col. California, Penn.	Thurstone	First sem.	.36
Landry	3 Eastern Col.	Verbal Aptitude	First year	.49
Leaf	LaSalle Jr. Col.	A. C. E.	First year	.57
Livingood	Wash. Col.	Average of two tests	First year	.37
Manning	Ursinus U.	A. C. E.	First year	.30, .45, .48, .57, .60
Manning	Ursinus U.	Otis S-A	First year	.50, .67
Morris	Albany Trs. Col.	Ohio State	First sem.	.43
Patterson	Minnesota U. Col. of Educ.	Miller Analogies	Col. of Educ.	.47
Peterson	U. of Cal. Col. of Agric.	A. C. E.	First sem.	.30, .47
Pettengill	U. of Minn.	Col. Aptitude	First year	.42
Quaid	Phillips U.	Ohio State	First year	.70
Quaid	Phillips U.	A. C. E.	First year	.66
Root	Hamline U.	Otis Gen. Intel.	Col. Ach.	.52
Ryans	Wm. Woods Col.	Not given	First sem.	.61
Schmitz	St. Benedict's	A.C.E.	First sem.	.58
Schmitz	St. Benedict's	Army Alpha	First sem.	.58
Smith	Stockton Jr. Col.	Thurstone	College	.44
Wagner and Strabel	Buffalo U.	Not given	First sem.	.58 men .72 women
			Median=	.52

test to predict college grades or it may be that the correlation ran unusually high in this sample.

W. Reitz[6] noted in his data at the University of Chicago an increased agreement between scholarship average as determined by both

[6] Wilhelm Reitz, "Forecasting Marks of New Plan Students at the University of Chicago," *School Review*, XLIII (Jan., 1935), pp. 34-38.

the A.C.E. psychological examination and achievement tests. A more recent study conducted by R. L. C. Butsch[7] at Marquette University in 1939 shows the need for each school to find its own correlation coefficient between college marks and every other prognostic factor. He found the correlations for the Schools of Business, Engineering, Journalism and Liberal Arts varying so remarkably that he says, "The variation is so wide that a particular section which furnishes

TABLE II

SUMMARIES OF CORRELATIONS BETWEEN INTELLIGENCE AND COLLEGE SCHOLARSHIP

Author	Date	Number	Median or Mean
H. R. Douglass	1931	160	.45–Med. .44–Mean
L. B. Kinney	1932	442	.445–Mean
David Segel	1934	100	.44–Med.
Mazie E. Wagner	1934	39	.40 to .50 incl.–Med.
G. W. Durflinger	1942	47	.52–Med.

the best single predictor for one college may be entirely negligible in its contribution for another."[8] However, the regression equations worked out for each school he found to be remarkably accurate when used in the same school the following year. "Predictions were on the average within .3 of a grade point of the actual grade earned."[9]

The conclusion may be drawn that intelligence tests are used in almost every attempt to predict college success whether alone or with other measures. In most schools the correlation between intelligence and college grades is between .40 and .50. Intelligence tests vary among themselves in their ability to predict college grades.

GENERAL ACHIEVEMENT OR CONTENT TESTS

There are some who contend that the achievement examination is as good a criterion of scholastic achievement in college as is the intelligence test, if indeed, it is not a better one. Philip M. Condit favors this point of view. "From the data accumulated in this study it appears that a reliable achievement test yields as good results for classification purposes as does a psychological examination."[10]

[7] R. L. C. Butsch, "Improving the Prediction of Academic Success through Differential Weighting," *Journal of Educational Psychology,* XXX (Sept., 1939), p. 401.

[8] *Ibid.,* p. 420.

[9] *Ibid.,* p. 420.

[10] Philip M. Condit. "The Prediction of Scholastic Success by Means of Classification Examinations," *Journal of Educational Reseach,* XIX (May, 1929), pp. 331-335.

Concerning the comparative value of high school averages and general content tests A. C. Eurich and L. F. Cain assert,

> General achievement tests provide a close second to high school averages as a single basis for predicting college scholarship. Various investigators have found the relationship between the College Entrance Examination Board tests and general scholarship to range from .39 to .64.[11]

E. H. Morris[12] in the Albany, New York, Teachers College used the New York Regents' averages with first semester college marks for several classes and secured correlation coefficients of .39, .42, .47, .48 and .53. H. A. Landry[13] used the College Entrance Examination Board content tests and obtained a correlation of .57 with first year grades in three Eastern colleges. C. T. Leaf[14] used the Iowa High School Content Tests and first year grades, finding a correlation of .63. At Marquette University R. L. C. Butsch[15] used the same tests and first semester grades in four different departments during three successive years. He found correlations of from .34 to .55. With the

TABLE III

SUMMARY OF CORRELATIONS BETWEEN HIGH SCHOOL ACHIEVEMENT TESTS AND COLLEGE GRADES REPORTED SINCE 1934

Investigator	Institution	Test	Criterion Grades	r
Butsch	Marquette U.	Iowa H.S. content	First sem.	.34, .41, .42, .47, .47, .47, .47, .48, .48, .48, .53, .55
Hanna	Wash. Sq. Col.	Coop. tests of math., Eng. and for. lang.	First sem.	.49
Landry	3 Eastern Col.	C.E.E.B. tests	First year	.57
Leaf	LaSalle Jr. Col.	Iowa H.S. content	First year	.63
Morris	Trs. Col.	Regents averages		.39, .42, .47,
			First sem.	.48, .53
			Median = .475	

[11] A. C. Eurich and L. F. Cain, "Prognosis," *Encyclopedia of Educational Research,* New York: The Macmillan Co., 1941, p. 849.

[12] E. H. Morris, "Some Results Secured in Personnel Work in a Teachers College," *School and Society,* XXXIX (May, 1934), pp. 574-576.

[13] H. A. Landry, "Relative Predictive Value of Certain College Entrance Criteria," *Journal of Experimental Education,* V (March, 1937), p. 256.

[14] C. T. Leaf, "Prediction of College Marks," *Journal of Experimental Education,* VIII (March, 1940), p. 303.

[15] Butsch, *op. cit.,* p. 401.

large number of teachers colleges affiliated with the Teachers College Personnel Association and purchasing general achievement tests (72 in 1937) it is surprising that there are so few published studies reporting the use of their examinations as predictive of college grades.

Douglass,[16] Segel[17] and Wagner[18] compiled summaries of reported correlations between general achievement examinations and college scholarship. Many of the important studies of the relationship between the same two variables reported since 1934 are summarized in Table III of the present study. A report of all four summaries is given in Table IV. The three earlier summaries found the median

TABLE IV

SUMMARIES OF CORRELATIONS BETWEEN CONTENT EXAMINATIONS AND COLLEGE SCHOLARSHIP

Author	Date	Number	Median or Mean
H. R. Douglass	1931	67	.55–Med. .54–Mean
David Segel	1934	13	.545–Med.
Mazie E. Wagner	1934	88	.56–Med.
G. W. Durflinger	1942	20	.475–Med.

correlation of many studies of the relationship between high school content examinations and college marks is about .55. This difference may be accounted for in the following ways:

1. The number of studies summarized in the present study is so small that the difference between .55 and .475 is probably not significant.
2. There may actually be a tendency for the correlations between high school content tests and college grades to become smaller. High schools are accepting more generally every year the principle that there is no significant correlation between the number of units earned in high school in any subject matter field and scholastic success in college. As a result students may not be prepared in one or two parts of the general high school achievement examination yet make good college students. As this principle achieves wider acceptance the correlation between comprehensive high school achievement tests and college grades will probably decrease.

Attention should be called to the fact that all of the studies reported here use content tests which cover the high school subject

[16] Douglass, *op. cit.*, p. 48.
[17] Segel, *op. cit.*, p. 59.
[18] Wagner, *op. cit.*, pp. 59-69.

matter but only one study has come to the attention of the writer which attempts to show how well college grades can be predicted from the results of an elementary school content test. In checking upon the validity of the Teachers College Personnel Association elementary test J. D. Heilman[19] reports the correlation between the above named test and college grades as .579 ± .025. Very few of the high school content tests correlated with college marks obtain as high a coefficient as this.

PERSONALITY OR TRAIT TESTS

The measurement of personality is a new procedure and is still in its experimental stages. Studies like those of Hartshorne and May[20] indicate that such abstract qualities as honesty, loyalty, and co-operativeness are meaningless apart from the actual situations in which they function. The concepts of Gestalt psychology also lead to the conclusion that traits and trait patterns are not independent of the field in which they operate. Therefore, a minute analysis of the constituents of a characteristic may not reveal an accurate picture of the whole.

It may be because of one or all of these facts that very few studies attempting to predict college success include any type of personality test. The Wayne University studies[21] in selective admission report the use of the Bernreuter Personality Schedule along with (1) faculty ratings, (2) principal's rating, and (3) curriculum advisor's report. All correlations for the personality test run from —.09 to +.15 which are so low as to cast doubt upon their validity.

S. R. Laycock[22] also experimented with the use of the Bernreuter test but used teaching success as a criterion. He reported a correlation of —.21 ±.05 between the neurotic tendency scale and practice teaching grades and +.33 ±.07 between dominance submission and practice teaching grades.

Eurich and Cain consider the traits of personality in their study of the prognosis of college success. They say, "The relationship between college scholarship, neurotic tendencies and dominance and

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[19] Heilman, *op. cit.*, p. 12.

[20] H. Hartshorne and M. A. May, *Studies in Deceit*, New York: The Macmillan Co., 1928.

[21] W. E. Lessenger and Others, "Selective Admission of Prospective Teachers," *Research Studies in Selective Admission and Placement*, No. I, Detroit: Wayne University, 1939.

[22] Sam R. Laycock, "The Bernreuter Personality Inventory in the Selection of Teachers," *Educational Administration and Supervision*, XX (January, 1934), p. 59.

submission are varied, but for the most part quite negligible."[23]

A. M. Turrell also reports the use of the Bernreuter Inventory in Pasadena Junior College. He separated the sexes and used the scores of 348 boys and 409 girls. The correlation coefficient was calculated for each of the four inventory ratings and the following grade point ratios: (1) General scholarship average for all subjects carried, (2) Average of academic subjects, (3) Average of semi-skill subjects, and (4) Average of skill subjects. He found no correlation coefficient higher than +0.12 and —0.15, so concluded, "There seems to be no significant relationship between the factors which this inventory measures and the grades given by teachers, considered as a general average or by subject field."[24]

The factor of interest was studied by M. M. Jacobsen[25] at Minnesota. K. Van Tuyl and A. C. Eurich[26] studied the same function and in both studies the conclusion was reached that interest yields a higher relationship with college success than any other personality trait and appears to be a remarkably stable function. D. G. Ryans,[27] on the other hand found persistence or drive to correlate more highly with college grades than any other personality factor. Studying junior college sophomores, he found a correlation of .48 between these two named variables. His persistence tests were developed from a group factor which emerged from a factor analysis of seventeen tests. The specific situations through which persistence is exemplified are (1) consecutive effort at rational learning, (2) self-ratings on a functional schedule, and (3) physical endurance (arm extension). As research such as this continues in this area, significant tests and relationships may be developed which will greatly enlarge the knowledge of this field and the usefulness of such data in prediction.

HIGH SCHOOL GRADE AVERAGES

When available, high school grades are frequently used as predictive indices. Generally they have been found to provide as accu-

[23] Eurich and Cain, *op. cit.*, p. 849.

[24] A. M. Turrell, "Relationship of Personality to Scholarship," *Junior College Journal,* Vol. V (April, 1935), pp. 355-357.

[25] M. M. Jacobsen, "The Quantitative Determination of Scholastic Interests among College Students," unpublished Ph.D. thesis. (University of Minnesota, 1928)

[26] Katharine Van Tuyl and A. C. Eurich, "Measuring the Interests of College Students with Different Major Subjects," *Journal of Applied Psychology,* XVIII (February, 1934), pp. 27-44.

[27] D. G. Ryans, "A Study of Observed Relationship Between Persistence Test Results, Intelligence Indices, and Academic Success." *Journal of Educational Psychology,* XXIX (November, 1938), pp. 573-580.

rate a basis for predicting college scholarship as any other single criterion. Segel[28] notices in his summary of studies that the correlations based on high school marks are more variable than those based on scholastic aptitude tests. He suggests that the reason for this is the variability in the meaning of marks or bases on which they are given. He found the r's to vary from school to school from .29 to .77.

"Past performance is the best index of ultimate success,"[29] says Mazie E. Wagner after a painstaking study of general and specific college achievement and various predictive measures at the University of Buffalo. She states further in support of her point of view, "Of those investigators who compare prediction criteria, the vast majority find that the high school record is more closely related to success than any other single criterion which they have studied."[30] Douglass[31] came to a similar conclusion over a decade ago at the University of Oregon. He found the average coefficient for college marks and high school marks is .54 and between intelligence test results and college marks it is .44.

There appears to be sufficient basis for concluding that the correlations between college scholarship and high school scholarship will vary from .50 to .60 with a median of approximately .55. This is practically the same (.545) as Segel found the correlation between achievement tests and college scholarship to be. Thus, it appears that a two hour achievement test will give a score that is as predictive of college scholarship as the more laborious method of accumulating the high school record.

COMBINATIONS OF VARIABLES

It has been repeatedly demonstrated that a combination of several indices is more accurate in predicting college scholarship than any single variable alone. A number of years ago A. B. Crawford,[32] working at Yale, found a multiple correlation of .74 between college scholarship and a combination of College Entrance Examination Board tests, high school record, an intelligence test, and age at entrance. L. D. Hartson[33] obtained a correlation of .75 using a

[28] Segel, *op. cit.*, pp. 70-71.
[29] Wagner, *op. cit.*, p. 59.
[30] *Ibid.*, p. 63.
[31] Douglass, *op. cit.*, p. 55.
[32] A. B. Crawford, "Forecasting Freshman Achievement," *School and Society*, XXXI (January, 1930), pp. 125-130.
[33] L. D. Hartson, "Further Validation of the Rating Scales Used with Candidates for Admission to Oberlin College," *School and Society*, XLVI (July, 1937), pp. 155-160.

combination of high school marks, the Ohio State Psychological Examination and the Ohio State Study Performance Test. In another study Hartson[34] used high school grades, an intelligence test and ratings by principal and teacher to correlate with first semester grades and found a multiple coefficient of .71.

Segel,[35] Douglass,[36] and Wagner[37] give summaries of many such multiple correlations. A table of multiple correlations calculated since the Segel and Wagner summaries in 1934 is included in Table V. All of these summaries and individual studies lead to the follow-

TABLE V

MULTIPLE CORRELATION COEFFICIENTS REPORTED BY DIFFERENT INVESTIGATORS SINCE 1934

Prognostic Variables	r	Reporter	Institution
H. S. rank, intelligence and H. S. content test..	.59 .70	Butsch	Marquette U.
Elem. school I.Q. and tenth grade scholarship.	.70	Byrns and Henmon	Wisconsin U.
T.C.P.A. intelligence, elementary and English tests		Durflinger	Nebraska Trs. Col.
Men	.54		
Women	.55		
H. S. marks, Ohio State intelligence and study performance test.....	.75	Hartson	Oberlin (men only)
T.C.P.A. intelligence and elementary tests..	.620	Heilman	Colo. St. Col. of Educ.
T.C.P.A. intelligence, English and elementary tests.....	.688	Heilman	Colo. St. Col. of Educ.
Intelligence and H. S. grades.....	.56	Hepner	San Diego State
Intelligence, English aptitude, H. S. content tests and H. S. marks.....	.79	Leaf	LaSalle Jr. Col.
Intelligence, H. S. rank, college aptitude test and freshman English.....	.83	Root	Hamline U.
Reading, English, immediate recall and Beta-type tests.....	.70	Selover & Porter	Ohio U.

ing conclusions: (1) Multiple correlation coefficients are rarely higher than .80 regardless of the variables used. (2) An intelligence test, a good achievement test and high school grade averages together usually bring the highest multiple r's. (3) The median multiple r as found in the summaries is between .60 and .70.

THE SEX DIFFERENTIAL

One of the first investigators in the field of the prediction of college success to recognize the importance of sex in the prediction formula

[34] L. D. Hartson, "Validation of the Rating Scales Used with Candidates for Admission to Oberlin College," *School and Society,* XXXVI (September, 1932), pp. 413-416.

[35] Segel, *op. cit.,* pp. 72-75.

[36] Douglass, *op. cit.,* p. 50.

[37] Wagner, *op. cit.,* p. 64.

was Wagner, studying at the University of Buffalo. She says, "Dividing a total student body into more homogeneous groups, e.g. by graduation school or sex or age, and then developing prediction formulae for such groups will be found more fruitful."[38]

In his study for prediction of college marks of Phillips University students T. D. D. Quaid came to a similar conclusion when he said,

> About the only statement one can make with confidence about the comparative predictive efficiency of high school average marks, American Council test scores and the Ohio State Psychological Examination is that none is best for all levels of ability or for both sexes.[39]

E. A. Rundquist,[40] studying junior high school students in the Cincinnati schools, reports that he notices the same sex difference in prediction at that level. He finds that the correlations between intelligence and grades runs about .10 higher for the women. This he notices drops off to practically nothing in the elementary school. M. E. Wagner and E. Strabel[41] report that in college also these variables give correlations of .72 for the women and .58 for the men.

Recent studies in college prediction have noticed a sex factor which needs to be given a differential treatment. The regression equation set up for the men is likely to predict less accurately for the women and vice versa. Likewise a regression equation set up for the total group is not likely to predict as accurately as one set up for each sex separately and accuracy of prediction is important in this field.

The studies summarized in this article indicate what other individuals and other colleges are doing in their attempts to predict with greater accuracy the chances that a student with a certain background and a measurable pattern of mental and personality traits will succeed in the academic work in college. The findings from one institution cannot be transferred unaltered to another college without considerable loss in validity but they can and do indicate the general trend of thinking and a few of the conclusions which may be specific or general.

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[38] Wagner, *op. cit.*, p. 20.

[39] T. D. D. Quaid, "A Study in the Prediction of College Freshman Marks," *Journal of Experimental Education,* VI (March, 1938), p. 363.

[40] E. A. Rundquist, "Sex, Intelligence and School Marks," *School and Society,* LIII (April, 1941), p. 452.

[41] M. E. Wagner and E. Strabel, "Homogeneous Grouping as a Means of Prediction of Academic Performance," *Journal of Applied Psychology,* XIX (August, 1935), p. 426.

I Registered 500 for Army Pre-Flight

WILLIAM S. HOFFMAN

FOR MONTHS the administrative officers at The Pennsylvania State College had been considering the introduction of groups of young men of the armed forces to the campus for various types of instruction. We were visited again and again by Army and Navy committees and finally we learned that 500 Pre-Flight trainees would arrive sometime before April 5, on which date their course of study was to begin.

On the evening of March 29 the sound of marching feet and lusty singing announced the arrival of the young men, and the next morning I was called to the President's office where I was given the answer sheets for the examination which the 500 young men had taken some time previously at Atlantic City. The examination sheets were those devised by the International Business Machines Corporation and were simply a series of numbers followed by rectangular spaces in which the trainee indicated his multiple choice answer. The examination was of five parts and included mathematics, physics, history, geography and English. The raw scores (total answers correct) for each section of the examinations were written on the sheet together with the name of the trainee, and in addition, the total of the raw scores was given. Assistants from my office and from the office of the President next prepared a three by five card for each trainee, each of which looked about as follows:

Reid	Wallace	E.
M	42	
P	21	
H	16	
G	16	
E	13	
T	108	

TRAINEES NUMBER 301 TO 400

Week beginning	APRIL				MAY					JUNE				JULY		AUGUST	
	5	12	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9
MATHEMATICS 15 weeks																			
GEOGRAPHY 4 weeks, 2 times daily HISTORY 4 weeks					PHYSICS 11 weeks LABORATORY														
MATHEMATICS 15 weeks																			
HISTORY 4 weeks, 2 times daily ENGLISH 4 weeks					PHYSICS 11 weeks LABORATORY														
MATHEMATICS 15 weeks																			
ENGLISH 4 weeks, 2 times daily GEOGRAPHY 4 weeks					PHYSICS 11 weeks LABORATORY														

Flight Training 48 hours
Medical Aid 20 hours
Civil Air Regulations 24 hours
Electives

TRAINEES NUMBER 401 TO 500

Week beginning	APRIL				MAY				JUNE					JULY					AUGUST			SEPTEMBER
	5	12	19	26	3	10	17	24	31	7	14	21	28	5	12	19	26	2	9	16	23	30	6
MATHEMATICS 16 weeks																		GEOGRAPHY					
GEOGRAPHY 7—3 weeks HISTORY 7 weeks ENGLISH 7 weeks								PHYSICS 12 weeks LABORATORY															
MATHEMATICS 16 weeks																		HISTORY					
HISTORY 7—3 weeks ENGLISH 7 weeks GEOGRAPHY 7 weeks								PHYSICS 12 weeks LABORATORY															
MATHEMATICS 16 weeks																		ENGLISH					
ENGLISH 7—3 weeks GEOGRAPHY 7 weeks HISTORY 7 weeks								PHYSICS 12 weeks LABORATORY															

Flight Training 48 hours
Medical Aid 20 hours
Civil Air Regulations 24 hours
Electives

Under Army instructions[1] these cards were then arranged in order, with the highest total first and the lowest total last. The entire group was next divided into five equal parts of one hundred each. Group number one (numbers 1-100) were to be at the College for three weeks of academic instruction, classes meeting five times a week, with special army class work on Saturday, the three academic weeks to be followed by four weeks of actual flight training at one of the nearby airfields. Group two (101-200) would have seven weeks of academic instruction followed by four weeks of flight training. Group three (201-300) would have eleven weeks of academic and four weeks of flight instruction. Group four (301-400) would have fifteen weeks of academic and four weeks of flight instruction. Group five (401-500) would have nineteen weeks of academic and four weeks of flight instruction.

As each group completed its flight training it would leave the Campus for instruction elsewhere and be replaced by an equal number. The flow chart in the office of the Military indicated that each group would leave on Friday or Saturday and would be replaced on Sunday or Monday. This means that at the end of seven weeks and each subsequent four week period one-fifth of the group would leave and a new fifth would arrive.

This task ended at 10:30 P.M. on Tuesday, March 30.

The next chore was to assign trainees to subjects on the basis of their scores in the several parts of the test. This took all of Wednesday for me and one assistant, and we worked for the first half day without one very important directive (note the use of the new army word.) Assignments should have been, and after a false start, were made, not only on the basis of need as evidenced by low scores on the tests, but also on the basis of a priority of usefulness of the subject to a pilot. This priority order (the army directive) was as follows: mathematics, physics, geography, history, and English.

In addition, in an eight hour school day, four hours were to be used for academic subjects, one for supervised study, one for instruction in military customs and hygiene, one for physical training, and

[1] The instructions referred to here and later were found in the following documents:

(1) Flight table E revised as of February 11, 1943.

(2) FTC memoranda Army Air Forces Headquarters, Flying Training Command, Fort Worth, Texas Numbers 50-25-1 to 50-25-7.

one for military drill. Two hours of physics laboratory accompanied the one hour of physics recitation, which, if scheduled, left room for but one other subject. With this in mind, and for the first three hundred trainees, the following combinations were all that were possible:

1. Physics and mathematics, or
2. Physics and English, or
3. Physics and geography, or
4. Physics and history, or
5. Mathematics, English, geography, history

Another army regulation said that whenever possible, four weeks of Mathematics should precede the actual class work in Physics. This was possible for the lower two groups (numbers 301-400 and 401-500) who would have fifteen and nineteen weeks respectively for academic work. The basic schedules arranged for these two groups appeared as follows:

Since physics would not begin for at least four weeks, some other *additional* subjects could be scheduled during this initial period. For trainees numbered 301-400, this meant scheduling three subjects a day for four weeks; or one subject three times a day for four weeks; or one subject twice a day for four weeks and a second subject once a day for four weeks—and this third plan was the one adopted. Actually it was discovered, the next day, that in this group of 100 only eight "needed" history, so this subject was eliminated and only two (the first and third) of the three different groupings were actually used.

In scheduling group five certain other restrictions entered. No recitation course (except mathematics which was allowed 80 hours) could cover more than sixty class-room clock-hours. Therefore physics could not run for more than twelve weeks, and so in a nineteen week period it could begin as late as the eighth week. This made possible the scheduling of three courses in addition to mathematics for the first seven weeks, and, when the eighty hours of mathematics had been completed, the scheduling of three weeks more of one subject.

Well, the breakdowns into subjects to be studied, and the preparation of basic schedules ended at 11 P.M. on Wednesday, March 31.

While I was busy at the chores listed above other members of my staff were preparing matriculation cards for each trainee, with

this additional line stamped on the card—"Void September 11, 1943" —the date the last group is scheduled to leave the campus. Still others were preparing record cards for each trainee. On these cards we recorded from the official army record form all the information we wanted, except the home address, which did not seem to be recorded on the cards. A record card as filled out for a typical trainee, is shown below:

Course	First Name	Middle Name	Last Name	No.
	Robert	Edward	Meury	12134954

Home Address	Street	Town	County	State
24 E. Gouverneur Ave.,		Rutherford	Bergen	New Jersey

Date of Birth: Dec. 2, 1922

Previous College Record: 2½ yrs. Lehigh Univ.

Department	Date Started	Date Completed

A Description of the Course is Printed on the Reverse of This Card

On the backs of these cards, sometime during the trainee's stay on the campus, the descriptions of the courses he is pursuing will later be printed, with a space reserved for the grades he earns during this period.

This brings me to Thursday. On this day we began to write group schedules, based on the subjects to be studied, available rooms, faculty, etc. This took two full days, and although we did not work Thursday night, Friday night was another late one. Schedules for the first three groups of one hundred were simple, but specimens for the two groups who were to remain here for fifteen and nineteen weeks of instruction, with the introduction of physics at a date some weeks after other subjects began, are shown just to indicate the difficulties of the problem.

301–400
weakest in Geography
daily except Saturday

Hours	Begins April 5	Begins May 3
8:00– 8:50	Geography	Physics Lab
9:00– 9:50	Study	Physics Lab
10:00–10:50	Mathematics	Mathematics
11:00–11:50	English	Study
1:10– 2:00	Geography	Military Customs and Hygiene
2:10– 3:00	Military Customs and Hygiene	Physics
3:10– 4:00	Physical Training	Physical Training
4:10– 5:00	Military Drill	Military Drill

401–500
weakest in History
daily except Saturday

Hours	Begins April 5	Begins May 24	Begins July 26
8:00– 8:50	Military Customs and Hygiene	Physics	Physics
9:00– 9:50	Mathematics	Mathematics	History
10:00–10:50	English	Physics Lab	Physics Lab
11:00–11:50	History	Physics Lab	Physics Lab
1:10– 2:00	Study	Study	Study
2:10– 3:00	Geography	Military Customs and Hygiene	Military Customs and Hygiene
3:10– 4:00	Physical Training	Physical Training	Physical Training
4:10– 5:00	Military Drill	Military Drill	Military Drill

Actually we issued to the trainee only the schedule for the work to be taken during the first period of attendance, a new one to be distributed when the introduction of Physics into the schedule made a change necessary. The date when the new schedule would be issued was noted in the original schedule. The schedule for a trainee in that portion of group 401-500 shown above, as given to the trainee, appeared as follows:

401–500 Name Johnston, Arthur O.
10 Wk. History Barracks #18
Schedule 22 (31)

DAILY EXCEPT SATURDAY AND SUNDAY

Hours	Subject	Building	Room
8:00– 8:50	Military Customs & Hygiene	White Hall	
9:00– 9:50	Mathematics	Forestry	103
10:00–10:50	English	Forestry	11
11:00–11:50	Physical Training	Recreation Building	
	Dinner		
1:10– 2:00	Study	White Hall	3
2:10– 3:00	History	Chemical Engineering	300
3:10– 4:00	Geography	Dairy	208
4:10– 5:00	Military Drill		

YOU WILL RECEIVE A NEW SCHEDULE ON MAY 24

In brief, although on the basis of subjects to be studied, only five different combinations were possible, the first one hundred, on account of section size restrictions, etc., broke up into six different groups. The number of groups (and therefore the number of different schedules) for each hundred was as follows:

1–100	6 different schedules
101–200	6 different schedules
201–300	6 different schedules
301–400	4 different schedules
401–500	4 different schedules

The actual number of sections in the various subject fields, and the number of trainees taking these subjects is as listed in the table on page 86—which table, however, does not include those cases[2] for whom we had no examinations, or for whom we had only the total score, and who were assigned to classes later, on information gathered by personal interviews.

On Saturday morning we began "dittoing" the individual schedules, making somewhat in excess of three times the number needed, with

[2] Twelve men were included in the original 500 who came with their army record card, but with no record of having taken any examination. Five men were here for whom we had the total score, but for whom we had no partial score or examination sheets.

the purpose of giving one to the individual trainee, one to the Dean in charge of the academic program for these 500 army trainees, and one to the Military. As fast as these came from the machine, we wrote the name of the trainee on these copies, pinned them together, and filed them alphabetically. We then had three alphabetical files—schedules, record cards, and matriculation cards. Using the record cards, since they were more easily handled, we broke the five hundred into five as nearly as possible parts. The actual division was as follows:

1. A–M
2. R
3. Sa–So
4. Sp–Sz, T
5. O, P, Q, U, V, W

This peculiar alphabetical breakdown was caused by the fact that we were supposed to get names only from the second half of the alphabet but some others did receive orders to report here.

Group	Mathematics			Physics			History			Geography			English		
	no. sections	no. students	no. weeks	no. sections	no. students	no. weeks	no. sections	no. students	no. weeks	no. sections	no. students	no. weeks	no. sections	no. students	no. weeks
1–100	2	49	3	2R 3L	53	3	2	62	3	2	62	3	2	60	3
101–200	2	49	7	3R 4L	75	7	1	33	7	1	39	7	2	46	7
201–300	3	72	11	3R 4L	73	11	1	32	11	1	34	11	1	31	11
301–400	3	98	15	4R 5L	98	11				2 1	74 24	8 4	1 2	24 74	8 4
401–500	3	96	16	4R 5L	96	12	1 2	31 75	10 7	1 2	22 24	10 7	2 2	43 53	10 10

This ended at 4:30 Saturday afternoon, and although we usually do not work Saturday afternoons, no one minded, and in spite of ration points, we had light refreshments furnished spontaneously by members of my staff.

During this week the trainees had been "in quarantine" in fraternity houses evacuated by our regular students. Instead of names like Chi Phi, buildings now bore such titles and signs as—

BARRACKS 19
ARMY RESERVATION
RESTRICTED

So on Saturday I had selected five barracks, and had assigned some of my staff, by two's, to go to a barrack on Monday, for the actual registration. Classes for trainees were supposed to begin April 5—Monday—but we registered them that day and classes met for the first time on Tuesday. Each trainee received a copy of his schedule, a matriculation card, gave us his home address, and filled in a card prepared by and for the use of the local church. Registration moved very quickly, and the five hundred were registered in just a bit over an hour.

Monday morning the trainees assembled just by my home (I live in the heart of our fraternity section) in "squadrons" depending on the building in which they would have their "eight o'clock," and at about 7:50 moved off, singing lustily, to their first introduction to Penn State professors.

Another item—the issuing of books and necessary supplies, furnished under contract by the College, was accomplished as follows. An alphabetical list of all trainees was typed, on which we listed the subjects scheduled by each trainee. A copy of this list was given to the book store, and all the trainee had to do was go to the store, present his matriculation card, the name was compared with the above list, and the supplies for his subject were handed him.

Just one word more—on Thursday, April 8, an inspecting officer appeared on the campus—no schedules were changed—no changes were suggested—and I am once more breathing smoothly and easily. Hold it! A new group arrives in May!

POSTSCRIPT

This was written shortly after April 8. On July 1 the enrollment in the armed services at The Pennsylvania State College included the Army Air Corps, now increased to 600, Navy Basic (V-12) 600, Army Engineers (Basic and Advanced) 815, Navy Ensigns in Diesel Engineering 130, a total of 2,145. In addition we have 101 Curtiss-Wright Cadettes and 90 Hamilton Standard Propeller Scholarship Holders. These figures added to the number in the armed forces give us a total of 2,336 students in attendance, not admitted by the College, but sent here for special instruction by the Government or by private business interested directly in war production.

Computational Arithmetic at the College Level

W. S. GUILER AND CARMILLE RUSH

FOR a long time educational leaders have been conscious of the role of numbers in intelligent behavior. Indeed, the emphasis which schools from early days to the present have placed on arithmetic in the triumvirate of the three R's lends testimony to the awareness of the need of training the youth of each generation to deal with the number aspects of their world. Nor has this emphasis been misplaced, for the simplest matters of everyday life, financial and domestic problems, reflections along scientific lines, civic and economic thinking—all have their quantitative aspects. So much do quantitative elements enter into our thinking that one writer has been led to say that unless one sees things "in quantitative terms, he scarcely sees them at all."[1]

Notwithstanding the emphasis which has been placed on arithmetic in the course of study, the results have been far from encouraging. Surveys of achievement show clearly that a large proportion of individuals who have completed their formal schooling in arithmetic cannot be relied on to do accurate computation in whole numbers, in fractions, in decimals, in practical measurements, and in percentage. Included in the surveys were 1,063 college freshmen[2] and 142 teachers in service.[3] The nature and extent of the computational shortcomings of these nearly mature and fully matured individuals are shown in Table I.

An analysis of Table I reveals some important findings. One major finding is that a considerable proportion of persons who have completed their formal schooling in arithmetic are weak in many of the computational skills. Of the 1,063 college freshmen, one third or more manifested weakness in fourteen of the twenty-five skills; one half or more, in four of the skills; and two thirds or more in two of the skills. Of the 48 teachers who were not teaching arithmetic, one third or more exhibited weakness in sixteen of the skills; one half or more, in eight of the skills; and two thirds or more, in four of

[1] Franklin Bobbitt, *How to Make a Curriculum.* Boston: Houghton Mifflin Company, 1924, pp. 146-147.

[2] W. W. Guiler. Unpublished study entitled "Computational Weaknesses of College Freshmen."

[3] W. J. Hilty. Unpublished Master's thesis, pp. 34-35. Miami University Library, 1935.

the skills. Of the 94 teachers who were teaching arithmetic, one third or more displayed weakness in five of the skills, and one half or more displayed weakness in two of the skills. Another important finding is that the percentage of teachers who showed weakness in the operation of some of the computational skills was significantly high.

The seriousness of the situation revealed by the surveys lies in the fact that deficiencies in computational skills impose serious handicaps on the persons concerned. They will hinder the individual in his mental reactions whenever quantitative elements are involved, regardless of whether these elements are encountered in school studies or in the practical affairs of life. The situation is especially serious when viewed from the standpoint of teaching. One may well question how effectively teachers can help learners acquire operational skills in which they themselves are deficient. Most certainly, it is not sound educational statesmanship to expect the blind to lead the blind.

In recognition of its responsibility in providing pupils with competent teachers, the School of Education of Miami University for more than a decade has been providing remedial service in computational arithmetic for prospective elementary-school teachers who are retarded in this phase of learning. The purpose of the service is twofold: (1) to protect the pupils of these prospective teachers from the latter's lack of competency in computational skills, and (2) to improve the students' ability to deal more effectively with the quantitative aspects of their environment. The procedures utilized and the results obtained with a group of students during the 1942-43 school year are reported in this article. The data on which the report is based were derived from scores made on the Christofferson-Rush-Guiler *Analytical Survey Test in Computational Arithmetic,*[4] which was given just before the remedial project began and later on after the project was completed. The test covers five phases of computation: whole numbers, fractions and mixed numbers, decimals, practical measurements, and percentage. Five skills are included in each phase of the test, and two examples are used to measure each skill, the examples being arranged in cycle form. Each example has a value of one point, the highest possible score being fifty points. The specific skills measured by the test are presented in Table I.

PROCEDURES

Selecting the Students. Selecting the remedial students constituted the first step in the project. The students were chosen on the basis of

[4] Published by the Harrison Publishing Company, Columbus, Ohio, 1939.

scores made on Form 1 of the analytical survey test to which reference was made in the paragraph above. The students selected were those who manifested a lack of competency in any of the phases of computation included in the test. Of the students who were enrolled in the remedial project when the work began, forty-nine remained to complete the work. The results presented in a later section of this report have to do with these forty-nine students.

TABLE I

PERCENTAGE OF COLLEGE FRESHMEN AND TEACHERS IN SERVICE EXHIBITING WEAKNESS IN VARIOUS COMPUTATIONAL SKILLS[a]

Computational Skills In Which Weakness Was Exhibited	1063 College Freshmen	142 Teachers in Service	
		48 Non-teachers of Arithmetic	94 Teachers of Arithmetic
Whole Numbers			
1 Column addition	38	25	18
2 Subtraction	12	12	8
3 Multiplication	27	27	20
4 Short division	12	16	3
5 Long division	52	46	23
Fractions and Mixed Numbers			
6 Addition	30	51	22
7 Subtraction	54	57	34
8 Multiplication	41	54	20
9 Division	45	39	24
10 Manipulation	35	39	10
Decimals			
11 Addition	17	23	12
12 Subtraction	12	16	4
13 Multiplication	4	4	1
14 Division	42	73	35
15 Manipulation	46	48	30
Practical Measurements			
16 Addition	32	33	17
17 Subtraction	23	33	12
18 Multiplication	39	31	19
19 Division	78	85	60
20 Reduction	25	33	18
Percentage			
21 Finding a per cent of a number	27	25	15
22 Finding what per cent one number is of another	45	54	20
23 Finding a number when a per cent of it is known	71	81	56
24 Finding the result of a per cent of increase or of decrease of a given number	36	44	22
25 Finding the per cent of increase or of decrease of one number on another	48	67	33

[a] Percentages were computed from scores derived from the Christofferson-Rush-Guiler *Analytical Survey Test in Computational Arithmetic* published by the Harrison Publishing Company, Columbus, Ohio, 1939.

Organizing and Administering the Remedial Program. The second step in the project consisted in the organization and administration of a systematic program of remedial instruction. Two class periods each week were devoted to the remedial work. The project began early in October. Most of the students had completed their work by the last of November; the others continued the remedial work until the end of the semester.

The remedial program covered five phases of computation: whole numbers, fractions and mixed numbers, decimals, practical measure-

TABLE II

SUB-SKILLS IN DECIMALS IN WHICH SOME OF THE REMEDIAL STUDENTS EXHIBITED WEAKNESS[a]

Sub-skills	Number of Student														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1 Using the vocabulary of decimals	x		x	x	x	x	x		x	x		x	x	x	x
2 Comparing numbers with the decimal point in relatively different positions	x											x			x
3 Rounding off numbers to the nearest unit, tenth, etc.	x	x		x			x		x	x	x	x	x	x	
4 Changing a fraction or a mixed number to a decimal	x		x	x	x	x	x		x		x	x	x	x	x
5 Changing decimals to fractions or to mixed numbers	x		x	x	x	x	x	x	x		x	x			x
6 Carrying answer in division to several decimal places	x		x	x	x		x		x		x	x	x	x	x
7 Adding decimals having the same number of places	x					x						x	x		
8 Adding decimals having a varying number of places	x									x		x			
9 Subtracting decimals having the same number of places			x												
10 Subtracting decimals having a varying number of places	x		x						x			x			x
11 Estimating products in the multiplication of decimals	x		x		x	x		x					x		
12 Multiplying an integer by a decimal or a decimal by an integer	x														
13 Multiplying a decimal by a power of ten															x
14 Multiplying a decimal by a decimal															x
15 Estimating quotients in the division of decimals	x		x	x	x	x						x	x		x
16 Dividing a decimal by an integer													x		x
17 Dividing a decimal by a power of ten			x										x		x
18 Dividing a decimal by a decimal when there are fewer places in the divisor than in the dividend	x				x								x		x
19 Dividing a decimal by a decimal when there are more places in the divisor than in the dividend	x	x	x	x	x	x					x	x	x		x
Number of sub-skills in which weakness was exhibited	14	2	10	7	8	7	5	2	6	3	5	11	11	4	13

[a] As revealed by the Diagnostic Test in Decimals.

ments, and percentage. The work within each unit was organized on an individualized group-instruction basis. In order to meet individual needs certain procedures were followed. First, the students were required to do remedial work only in the units in which they manifested weakness, as determined by their scores on the various phases of the preliminary analytical survey test. Second, before the students began remedial work in a particular unit, they were given a diagnostic test in order to discover their specific difficulties. The individual learning needs which were revealed by this type of diagnosis for a limited number of the students are shown in Table II. Third, each student kept a record of his own shortcomings, as revealed by his own diagnostic test papers. This record served to focus attention on individual study and practice needs. Fourth, the class work was organized on the basis of the specific learning needs of individual students. When a majority of the students displayed weakness in a given computational skill, group instruction was employed; when only a few students experienced a given difficulty, instruction and practice were organized for the particular students concerned. Fifth, the class work consisted in direct teaching and abundant practice centered on the particular skills which caused difficulty. This direct teaching and practice was facilitated through the use of a book entitled *Foundation Skills in Mathematics*[5] in which the materials are arranged in a way that makes it possible for each student to obtain self-teaching and extensive practice in the skills in which he is deficient. Sixth, provision was made for a large degree of self-administration of the remedial program. The organization of the self-teaching and practice materials was such that only a limited amount of teacher direction was necessary. The teaching material was accompanied by an abundance of illustrations, and the practice exercises were preceded by clear-cut directions and were of the objective type. Moreover, scoring keys were available so that each student could score the exercises on each skill as soon as he had completed them. This provision for a considerable degree of self-administration of the remedial program relieved the teacher of much routine work and thereby enabled her to use the time thus saved in helping individual students overcome their difficulties.

Table II and other tables which cannot be presented here contain the type of essential information on which programs of learning and teaching in general and a remedial program in particular should

[5] H. C. Christofferson, Carmille Rush, and W. S. Guiler, *Foundation Skills in Mathematics*, Columbus, Ohio: Harrison Publishing Company, 1939.

be based. The crosses in the table indicate the specific sub-skills in decimals in which individual students displayed weakness, as revealed by the diagnostic test in decimals.[6] Analysis of Table II reveals a number of salient facts. First, the students varied greatly in the number of sub-skills in which they exhibited weakness. Thus, Student 1 was weak in seven times as many sub-skills as Student 8. Second, the students manifested marked individuality in the sub-skills in which they displayed weakness. Thus, while Students 12 and 13 manifested weakness in eleven sub-skills, they were weak in only seven of the same sub-skills. Third, certain of the sub-skills caused more difficulty than did others. Only one student showed weakness in sub-skills 9, 12, 13, and 14, while twelve students showed weakness in sub-skills 1 and 4. In ten of the nineteen sub-skills, fewer than one third of the students encountered difficulty; on the other hand, in four of the sub-skills, more than two thirds of the students encountered difficulty.

Measuring Improvement. The final step in the remedial program consisted in measuring the amount of improvement that was made. For this purpose, Form 2 of the Christofferson-Rush-Guiler *Analytical Survey Test in Computational Arithmetic* was used. This test is the equivalent of the initial test in content and in difficulty. The passing score on the final test was made several points higher than that on the initial test in order to counterbalance the loss in ability which is likely to occur after intensive study and practice have ceased.

RESULTS

Improvement in Terms of Total Test Scores. The amount of improvement made by the forty-nine remedial students in terms of total test scores is shown in Table III. Analysis of the table shows that all of the students, except two, attained scores on the final test that were higher than the median score on the initial test, and that approximately three fifths of the students made scores on the final test that were higher than the best score made on the initial test. The median score was raised from 34 on the initial test to 46 on the final test. Interpreted in terms of percentile rank based on the distribution of computational arithmetic scores for all Miami University freshmen, this gain in median score is the equivalent of an increase of twenty-seven points in the percentile rank. Interpreted in terms of grade norms, this gain is the equivalent of more than two years

[6] H. C. Christofferson, Carmille Holley, and W. S. Guiler, *Diagnostic Test in Decimals,* Form 1, Philadelphia: F. A. Davis Company, 1934.

of growth in computational ability. The percentage of gain in total score from initial to final test was 70.5.

Improvement in Terms of Error Quotients. The improvement that was made by the remedial students in terms of error quotients is

TABLE III

TOTAL SCORES ON INITIAL AND FINAL TESTS

Class-Intervals	Number of Students	
	Initial Test	Final Test
50		3
48–49		12
46–47		13
44–45	2	7
42–43	6	6
40–41	4	1
38–39	4	3
36–37	6	2
34–35	4	1
32–33	2	1
30–31	5	
28–29	2	
26–27	3	
24–25	3	
22–23	2	
20–21	1	
18–19	2	
16–17	1	
14–15	2	
Total	49	49
Median score*	34	46
Gain in percentile rank†	27	
Percentage of gain‡	70.5	

* Computed from original test scores.
† Based on distribution of scores of all Miami University freshmen.
‡ Computed by dividing the actual point gain by the possible point gain.

shown in Table IV. The idea of using error quotients as a measure of mastery seems to have originated with Stormzand and O'Shea, who state that these quotients are "determined by using the frequencies of error for an individual or a group as a numerator of a fraction in which the denominator shall represent chances for error."[7] Since the error quotient considers the number of mistakes in relation to the number of chances to make mistakes, it is a much more valid

[7] Martin J. Stormzand and M. V. O'Shea, *How Much English Grammar?* Baltimore: Warwick & York, Inc., 1924, p. 14.

measure of the prevalence of error than is a mere count of errors. Reference to the top left-hand figure in Table IV will serve to show how the error quotients were computed. Thus, there were forty-nine remedial students. Since the test covers twenty-five skills and each skill was measured by two examples, there were 2,450 chances (49 x 25 x 2) for these students to make errors. The number of errors actually made was 852; hence, the error quotient was .348 (852 ÷ 2,450). An inspection of the table shows that there was a mean decrease of .246 in the size of the error quotient from the initial to the final test; the corresponding percentage of decrease was 70.5.

TABLE IV

ERROR QUOTIENTS ON INITIAL AND FINAL TESTS*

	Initial Test	Final Test
Mean error quotient	.348	.102
Mean decrease in error quotient from initial to final test	.246	
Percentage† of decrease in error quotient from initial to final test	70.5	

* All computations were based on original test scores.

† The percentage of decrease was found by dividing the actual decrease in error quotient from initial to final test by the possible decrease in error quotient.

TABLE V

NUMBER OF SKILLS IN WHICH NO WEAKNESS WAS EXHIBITED*

	Initial Test	Final Test
Mean number of skills per student in which no weakness was exhibited	13.2	20.9
Mean increase in the number of skills in which weakness was overcome from the initial test to the final test	7.7	
Percentage† of increase in the number of skills in which weakness was overcome from the initial test to the final test	65	

* All computations were based on original test scores.

† The percentage of increase was found by dividing the actual number of skills in which weakness was overcome by the possible number of skills in which weakness might have been overcome.

Improvement in Terms of Acquired Skills. The improvement made by the remedial students in terms of the number of computational skills acquired during the course of the project is recorded in Table V. Inspection of the table shows that the remedial students, on the

average, exhibited proficiency in 7.7 more computational skills at the end of the project than they did at the beginning; the corresponding percentage of increase in the number of acquired skills is 65.

Improvement in Specific Phases of Computation. The improvement made by the remedial students in the various phases of computation is shown in Table VI. Several interesting facts emerge from an analysis of the table. One fact is that there was a significant gain in all of the five phases of computation, the percentages of gain rang-

TABLE VI

SCORES IN SPECIFIC PHASES OF COMPUTATION*

Phases of Computation	Mean Initial Test Score	Mean Final Test Score	Mean Point Gain	Percentage of Gain†
Whole numbers	8.1	9.2	1.1	61
Fractions and mixed numbers	7.7	9.4	1.7	74
Decimals	7.3	9.0	1.7	62
Practical measurements	5.4	8.9	3.5	76
Percentage	4.1	8.3	4.2	72

* All computations were based on original test scores.

† The percentage of gain was found by dividing the actual gain in point score by the possible gain in point score.

ing from 61 in whole numbers to 76 in practical measurements. Another fact is that the greatest mean point gain was made in the two phases (i.e. practical measurements and percentage) in which the least proficiency was shown when the project began, and that the least mean point gain was made in the phase (i.e. whole number) in which the greatest proficiency was shown when the project began. A third fact is that the mean point gain was much greater in some phases than in others. Thus, the mean point gain in practical measurements and in percentage was more than double that made in fractions and mixed numbers and in decimals, and from three to four times that made in whole numbers. It should be noted in passing that all of these gains need to be interpreted in the light of the fact that the possible gain in a given phase of computation depends to a considerable degree on the students' initial proficiency in that phase.

Improvement in Terms of Intelligence Level. The amount of improvement made by the remedial students classified according to intelligence level is recorded in Table VII. Analysis of the table shows that the mean computational score both in the initial test and

in the final test was progressively smaller from the highest intelligence classification to the lowest; however, the amount of decrease in the mean score from one intelligence grouping to the next lower grouping was much less marked in the final test than it was in the initial test. The progressive increase in mean point gain from the highest intelligence third to the lowest should be interpreted in the light of the fact that the students in the lower intelligence classifications had somewhat greater opportunity to make improvement than was the case with the students in the next higher classification. Probably, the best conclusion to be drawn from the table is that the students in all three of the intelligence groupings made marked improvement in computational ability.

TABLE VII

MEAN POINT GAIN AND PERCENTAGE OF GAIN MADE BY STUDENTS GROUPED ACCORDING TO INTELLIGENCE LEVEL*

Intelligence Group	Mean Percentile Rank	Mean Score in Computation		Mean Point Gain	Percentage of Gain†
		Initial Test	Final Test		
Highest third	81.7	37.5	47.0	9.5	76
Middle third	45.3	33.2	44.7	11.5	69
Lowest third	16.6	28.1	42.9	14.8	68

* Intelligence scores were derived from the Henmon-Nelson Test of Mental Ability for College Students (Form A).

† The percentage of gain was found by dividing the actual gain in point score by the possible gain in point score.

Improvement in Terms of Initial Status in Computation. The improvement made by the remedial students classified according to

TABLE VIII

MEAN POINT GAIN AND PERCENTAGE OF GAIN MADE BY STUDENTS GROUPED ACCORDING TO SCORE ON INITIAL TEST*

Level of Computational Ability	Mean Score in Computation		Mean Point Score	Percentage of Gain†
	Initial Test	Final Test		
Highest third	41.4	47.3	5.9	69
Middle third	33.9	45.9	12.0	74
Lowest third	22.6	41.4	18.8	68

* All computations were based on original test scores.

† The percentage of gain was found by dividing the actual gain in point score by the possible gain in point score.

computational achievement when the project began is exhibited in Table VIII. The major finding revealed by an analysis of the table is that there was a striking increase in the mean point gain from one achievement classification to the classification below. A second fact is that both in the initial test and in the final test there was a progressive decrease in the mean computational score from the highest achievement classification to the lowest; however, the amount of decrease in mean score from one achievement grouping to the next lower grouping was much less marked in the final test than it was in the initial test. A third fact is that the greatest percentage of gain was made by the students in the middle third classification, although the greatest mean point gain was made by students in the lowest third classification.

Individual Variation in Improvement. Table IX shows the extent

TABLE IX

GAIN IN SCORES MADE BY INDIVIDUAL STUDENTS

Points of Gain	Number of Students	Points of Gain	Number of Students
28	1	13	5
27	1	12	2
26	1	11	5
25	1	9	3
22	1	8	2
20	1	7	4
19	2	6	5
18	2	4	2
17	1	2	1
16	2	1	2
15	1		—
14	4	Total	49

to which the remedial students varied in the amount of improvement which they made in computation. The major fact revealed by the table is that marked differences characterized the amount of improvement that was made by individual students.

RELATED PROBLEMS

The data yielded by this remedial project throw some light on two problems which have distinct significance for teaching and learning in the field of computation. One problem relates to the relative difficulty of the five phases of computation. Probably the best measure of the relative difficulty of the different phases is to be found in the

comparative size of the error quotients on these phases at the termination of a period of individualized and intensified training of the type involved in this project. Accordingly, the error quotients for the different computational phases were computed from the students' final test papers. These quotients are recorded in Table X. Analysis of the data shows that the students encountered the most difficulty in dealing with percentage and the least difficulty in dealing with fractions and mixed numbers. On the basis of size, the error quotients for the different phases of computation in the final test were as follows: 16 for percentage, 12 for practical measurements, 10 for decimals, 8 for whole numbers, and 6 for fractions and mixed numbers.

A second problem relates to the relative difficulty of the twenty-

TABLE X

ERROR QUOTIENTS OF REMEDIAL STUDENTS IN FINAL TEST ON DIFFERENT PHASES OF COMPUTATION AND ON SPECIFIC SKILLS*

Phases of Computation and Specific Skills Covered by Initial and Final Tests	Error Quotient	Phases of Computation and Specific Skills Covered by Initial and Final Tests	Error Quotient
Part I. Whole numbers:		Part IV. Practical measurements:	
1 Column addition	8	16 Addition	6
2 Subtraction	1	17 Subtraction	16
3 Multiplication	11	18 Multiplication	12
4 Short division	7	19 Division	19
5 Long division	10	20 Reduction	5
Mean for Part I	8	Mean for Part IV	12
Part II. Fractions and mixed numbers:		Part V. Percentage:	
6 Addition	8	21 Finding a percentage of a number	11
7 Subtraction	3	22 Finding what percentage one number is of another	11
8 Multiplication	11	23 Finding a number when a percentage of it is known	27
9 Division	9	24 Finding the result of a percentage of increase or of decrease of a given number	14
10 Manipulation	0	25 Finding the percentage of increase or of decrease of one number on another	14
Mean for Part II	6	Mean for Part V	16
Part III. Decimals:			
11 Addition	3		
12 Subtraction	2		
13 Multiplication	1		
14 Division	11		
15 Manipulation	33		
Mean for Part III	10		

* Error quotients were computed from original test scores and were found by dividing the number of wrong answers by the number of chances of obtaining wrong answers. Decimal points have been dropped from the quotients in the table.

five computational skills which the remedial project sought to improve. Error quotients derived from the final test were used as a criterion of difficulty. The resulting quotients are recorded in Table X. Examination of the table shows that the students had much more difficulty in attaining some of the skills than was the case with other skills. Thus, the error quotients on the final test were above twenty-five for two of the skills (15 and 23), and below five for six of the skills (2, 7, 10, 11, 12, and 13).

SUMMARY AND CONCLUSION

On the basis of the data that have been presented, the following statements are made by way of summary and conclusion:

1. A large proportion of individuals who have completed their formal schooling in arithmetic cannot be relied on to do accurate work in computation.
2. Individualized group instruction based on individual diagnosis is more effective than conventional group instruction in the improvement of computational habits.
3. Some phases of computation are more difficult to improve than are others.
4. Some specific computational abilities are much more difficult to improve than are others.
5. The difficulties which students encounter in computation are individual and specific.
6. Students of all levels of mental ability were able to profit significantly from the remedial work.
7. Students of all levels of initial achievement in computation made marked improvement.
8. Students may be expected to vary greatly in the amount of improvement resulting from a remedial program in computation.

America's Educated Army—A Note

DON E. HALL

MODERN warfare is destructive, it is chaotic, it is cruel, hard and bitter; but it requires a considerable degree of education along the lines of the arts, sciences, and other technical occupations of today. The modern soldier must be well educated and well versed in the art of warfare, for specialization has found its way into the Army as well as it has into civilian professions. Warfare today requires a higher level of education than ever before and America must meet and is meeting the genius of its mortal enemies.

In a joint study made of the educational level of men of military age in the United States by Brigadier General Frederick H. Osborn, Chief of Special Service, and Director J. C. Capt, Bureau of the Census, Department of Commerce, it was found that the Army has the highest standard of intelligence in history. The growth of education in recent years is manifested by a comparison of the American Doughboy of World War I and the American Doughboy of World War II. In the present war, 11 per cent of the white selectees have a formal college or university education in comparison to 5 per cent in 1917. Thirty per cent of our Army today are high school graduates while only 4 per cent had completed high school in World War I. Unfortunately, the number of illiterates cannot be estimated since the completion of no particular grade of school corresponds to the attainment of a state of literacy. However, some information may be derived from the fact that only 31 per cent of the soldiers of today have a grade school education or no schooling whatsoever, while in 1917, 79 per cent of the entire army were in this classification.

This almost phenomenal improvement in the standard of education of soldiers in the last twenty five years is attributed directly to the spectacular increase in educational opportunities in the United States and to the commendable work being done by the educators. For instance, in 1940 on the eve of our entry into the war, almost as many men were attending college as were in high school less than twenty-five years before. The high school enrollment in 1940 was seven times greater than in 1916.

Census Bureau figures for 1940 reveal that of the men in the 18-44 age group who have registered for Selective Service, only 5.3 per cent

had less than 4 years of formal schooling. Approximately one-half of this group had less than 9 years of school with the other half having more. The median number of years of schooling in this group of men of military age is 9.4 or the equivalent of slightly more than one year of high school.

Geographic comparisons show that the white men of military age in the West (the Mountain and Pacific States) are much better educated than those in the North (New England, Middle Atlantic, East and West North Central States). Men from the South (South Atlantic and East and West South Central States) are less well educated than either of these groups.

Educational attainment, the study indicated, was highest among whites and lowest among negroes, with other racial groups (mainly Indians and Orientals) occupying an intermediate position. However, negro education has advanced considerably during the past two decades. In comparing the negro soldier of today to the one of 1917 we find that 63 per cent of the northern negro selectees and 33 per cent of the southern negro selectees today have attended high school while in World War I only 14 per cent of the northern negro draftees and 3 per cent of the southern negro draftees had entered secondary school.

From these statistics one can readily see that the average private in the Army today is well educated, both in practical and book education. He knows what he is fighting for and because his education has impressed upon his mind the true meaning of the word "Freedom" he is more than willing to do his part. The high morale and spirit of co-operation which are manifest in our soldiers are directly traceable to their primary and secondary education. The effects of early education in history, geography, and government are now becoming known and are making the American soldier the best in the world.

Freedom is a more or less abstract concept. There is a line of philosophy which states that "one has to be deprived of freedom before one can realize that he cannot live without it." Our educators have tried to discredit that philosophy by imbuing every one of their pupils with a deeply patriotic sense and a fuller and greater realization of their heritage. One merely has to glance at the War Department's records to find that their efforts are bearing fruit.

Editorial Comment

Post-War Education

MUCH is being written and said concerning the changes that will occur in higher education in the United States as a result of the war. Some apparently think, or perhaps hope, that radical changes will be effected and that the present pattern will hardly be recognizable in post-war days. There is little in the history of education to support such a view. Colleges and universities, like most social agencies, are extremely conservative. Changes are effected, but gradual evolution is the rule, not revolution. It seems likely, therefore, that in its outward form, at least, higher education after the war will be not greatly different from what it has been during the last two or three decades. This will be especially true as far as the more superficial aspects are concerned. There is no reason for believing, for example, that the athletic situation will be greatly changed or improved. There is, in fact, reason for thinking that it will be worse before it is better. There will be about the usual amount of "rah rah"; students will probably not be more serious than in the past; they will not give more time to academic matters and less to extra-curricular affairs; they will probably not in any large numbers accelerate their programs of study either by extending the working load or the school year. Significant changes in these and other respects will not be made for a variety of reasons, but primarily because the taxpayer and parent do not want them made.

However, all this is not to say that the educational leadership of the nation should assume that things will continue to be the same and that there is, therefore, no need for post-war planning in higher education. There is, on the contrary, grave need for a re-evaluation of many of the things we have been doing and for a careful study of the peculiar problems that will confront us when the war has ended.

It is well to ask, for example, what part the universities and colleges can and should play in the demobilization of the armed forces. If young men with suitable backgrounds are to be furloughed into the colleges and actually discharged from service only after completing their college studies, or if any other form of subsidization of college work is in the offing, it should be known to college authorities in

order that careful planning may insure the largest contribution to youth and the greatest economy in time and money.

We must be prepared to care for vastly larger numbers of students than we now serve or than were served prior to the war. Moreover, they will be less homogeneous with respect to age and experience than were our pre-war students. This heterogeneity in itself will make necessary more careful social controls and greater flexibility in curricula and academic administration. Careful guidance will be necessary to bring about anything like a balance between the professionally trained in various fields and the demands for their services. That we shall have an excess supply of technicians of almost every kind becomes more apparent every day. Liberal education, on the other hand, is for the present in partial eclipse. It should not remain so.

Our experiences with acceleration and with the Specialized Training Programs of the Army and Navy are convincing us of certain things we have always suspected, but about which we have done little. Our college and university plants have not been effectively utilized, students have rarely worked up to capacity, and in general our efficiency rating has been low. We have been made to realize what we can do when we have to, and from this knowledge there should be some profit.

Our instruction must be geared to the problems that confront us now and that will be challenging us in the coming years. No effective world order, whether it be thought of in terms of the peace treaty itself, a world economic structure, political federation or union, guarantees against further wars, or in any other light, can possibly become a reality until it is energized by an enlightened and crusading people. In directing its instruction and research to such inspiration and enlightenment, higher education finds its greatest post-war challenge.

L. M. C.

More Pacifism?

We cannot help wondering, as we read the accounts in the newspapers of the report recently issued by the Educational Policies Commission having to do with an international agency "to curb the indoctrination of youth with militarism and plans of national aggression," whether this war is to be followed by another wave of pacifism such as we experienced during the past quarter of a century.

In speaking to a group of college administrators assembled at the University of Chicago more than a year ago General Ben Lear laid

much of the responsibility for our unpreparedness as a nation to the teaching given to our young people in the colleges of the country. He stated that there was a lack of appreciation of the democratic principles upon which our government was founded even among the officers in the Army. The attitude toward war on the part of many drafted men made it difficult to develop them into fighting men.

The Commission proposes to set up an educational control agency for the world. "It should be solemnly charged with the duty of studying text books, syllabuses, and teaching materials, used or proposed for use in any and all countries, in order to determine whether their effect would be aggressive, militaristic, or otherwise dangerous to the peace of the world."

There is no doubt that much good could be accomplished by the establishment of such an agency and we are glad to note that thought and study are being given to post-war problems. We trust, however, that a realistic view will be taken of the situation and that adequate safeguards will be set up to protect the interests of the United States as well as of the rest of the world. We cannot afford to go back to pre-war isolationism, nor can we afford to go back to the pre-war pacifism so rampant on college campuses during the past quarter century.

E. C. D.

Business as Usual

Representative "Sammy" Weiss, of Pennsylvania, has been exerting such pressure as he can to get the Army to modify its stand against allowing Specialized Training students to participate in intercollegiate athletics. Congressman Weiss has so far neglected to explain why the overburdened transportation system should be asked to carry the additional burden of transporting teams and spectators to football games—and on week-ends, at that. Nor has he explained why, in war-time, when physical fitness for every man is of major importance, any college should indulge in its usual peace-time extravagance of subordinating the physical welfare of the student body as a whole to that of a score or two of exhibiting athletes. These, of course, are minor considerations. They always have been.

It is not likely that the War Department will accept the Congressman's viewpoint. Secretary Stimson has so indicated in a letter to the Editor. Should they do so, it would be a major setback to the education of many of the men in the Specialized Training units, who are supposed to be following a thorough program designed to make

better officers of them. Nobody who knows the record of athletics in higher education can doubt that that program would suffer if the gate-receipts "educators" were allowed to meddle with it. It would suffer by lowered standards, by ceaseless interference with the primary objective for which it was established, by unremitting pressure to substitute athletic prowess for intellectual achievement, by continuous demands that a small group be allowed special privileges and released from requirements designed for their educational welfare. The whole history of intercollegiate athletics has presented exactly that picture, and the sponsors of athletics, who are now making a "business as usual" plea through Mr. Weiss, will continue precisely as usual if they are given a chance.

Before he became a statesman, Congressman Weiss, according to the newspapers, was a professional football referee.

Good for What Ails You

These are days of unbelievable stress and strain; of fantastic pressures both physical and psychological. Scarcely a campus anywhere has been able to preserve its traditional leisurely calm; most of us are living in the midst of turmoil we could hardly have imagined a few short years ago.

All of which is a peculiar introduction to an editorial on leisure. But leisure is like water in a desert: the less you have of it, the more you need it, and the more precious and revitalizing is the little you can find.

Most of us do not have to look far to see tragic victims of the pressures under which we are all living; men and women whose health has broken under the strain. There will be thousands more before ordered times return. But there is a safeguard within the reach of all of us; a sure defense against the kind of breakdown which accompanies troubled times. It lies in the preservation of a daily quota of leisure time, which must be stubbornly protected against the multifarious demands upon it. An hour or two a day of leisure to read, to visit, to play golf or go fishing or whatever you will—here is a simple and sovereign prescription which each of us can fill for himself, and which can hardly fail.

"Nice if you can do it," says a harassed and skeptical Registrar somewhere. But you *can* do it. Did you ever stalk out of a committee-meeting at 10:00 P.M. to go home and read for an hour before bedtime? Try it next time you are caught. The college will not col-

lapse, and the committee will get its work done just the same. It may even learn to economize its effort and adjourn on time. Or tell somebody who wants to talk business on Sunday afternoon that you won't see him outside of office hours. You'll not lose your job, and he'll find he can get to your office on a weekday if he has to. A Registrar will be imposed upon and robbed of his leisure just so long as he allows himself to be. He will be a better administrator and a happier individual, he will probably live longer, and *he will get more work done,* if he stubbornly insists upon his daily time of complete relaxation, and tenaciously protects it against all comers. We know what we are talking about, for we have tried it and made it work.

The April Convention

President Robinson has already begun to lay plans for next April's convention of the A.A.C.R. The first question that presents itself, of course, is whether the convention should be held at all. Last year the Association yielded to an appeal to its patriotism and cancelled its meetings. But a great many other organizations, far less concerned than we with the war effort, did not. One women's organization which considers itself super-patriotic, held a sizable convention in Cincinnati, and if that convention did anything for the war effort except pass resolutions, the newspaper reports failed to mention it. Other learned and educational societies besides the A.A.C.R. cancelled their meetings, but no one else seems to have done so. Accounts of various conventions are constantly appearing in the city newspapers.

In these days, when every college and university is making an impressive and tangible contribution to the war effort, and when every one of them, without exception, is grappling with a multitude of grievous problems which an exchange of information would go far to solve, the A.A.C.R. can render far greater service by holding its meetings than by omitting them. The railway and hotel traffic involved is negligible in comparison to the actual benefits in view, not only to ourselves, but to the whole participation of education in the war. It is to be hoped that the convention will be held.

This is the Editor's opinion. He does not pretend to voice the sentiments of the Executive Committee or of the members at large. The President of the A.A.C.R. invites communications from members everywhere.

Book Reviews

Educational Measurement and Evaluation. Remmers, H. H. and Gage, N. L., New York: Harper & Brothers, 1943, pp. v + 560.

The authors state in the introduction to this dissertation that "the major purpose of evaluation is to furnish data for guidance, in serving which we also serve the other functions of evaluation, the content of our evaluations should be whatever is needed as a basis for guidance."

It is brought out clearly that if evaluation is to be effective it must be both continuous and comprehensive. Continuity as used here implies that evaluation should be carried on at all times throughout the child's school years. Every test, recitation, assignment, and behavioral detail should be material for evaluation and should serve as the basis for a cumulative record which should be passed on to the pupil's next teacher. The comprehensiveness of evaluation refers to the whole personality of the pupil as well as to the intellectual achievement. Personality traits, such as habits, attitudes, interests, temperament, social adaptability and physical characteristics are very important in fitting the child happily into life's work.

Other purposes of evaluation as discussed here are as follows: (1) to maintain standards necessary for our social and economic life, (2) to select pupils for specific purposes, such as college entrance, (3) to motivate learning by examinations, (4) to guide teaching by means of the diagnostic values, (5) to serve as an instructional device, and (6) to aid in the appraisal of educational instrumentalities, such as teachers, teaching methods, textbooks and curriculum materials.

Considerable discussion is centered on topics having to do with the testing program, standardized tests, construction of tests, value of tests, administration of the testing program and the interpretation of scores. Several chapters have been given to the discussion of personal qualities, such as emotional and social adjustment, attitudes, environment and physical aspects.

The approach to guidance in this publication is interesting and in many respects unique. Although some sentences are quite long and tedious, the book is scholarly and well written. In the opinion of the reviewer the book is a splendid contribution to our educational literature. The authors are to be commended for their masterly production.

C. L. MURRAY
Ball State Teachers College

Junior College Directory, 1943. Eells, Walter Crosby, Washington, D.C.: American Association of Junior Colleges, 1943, pp. 36.

This annual directory is an official publication of the American Associa-

tion of Junior Colleges. Its aim is to include information concerning all junior colleges in the United States. There can be no doubt of the comprehensive and useful character of the contents of this directory.

First there is presented a summary of data on a state-wide basis (state by state), showing the number of junior colleges, type of control (public and private), enrollment, number of faculty, and membership in the American Association of Junior Colleges.

Then for each state separately each junior college is described with reference to: location, name of administrative head, source of accreditation, type (coeducational, men only, etc.), source of control or affiliation, date organized, number of years included in the junior college, number of students (freshmen, sophomores, special), number of faculty (full-time and part-time).

Following this, the largest single section of the directory, is a list of honorary and sustaining members of the Association. These are, of course, in addition to the institutional members.

Two pages are devoted to a list of junior college societies, honorary (academic) and social organizations. This section is particularly usable because it includes names and addresses of officers.

Another practical feature of the booklet is the analysis of junior college growth. Into five pages are packed many illuminating items, showing trends in the development of enrollments for institutions of various sizes and kinds.

As the last section of the directory there is an alphabetical list of junior colleges with the name of the state in which the institution is located.

These annual directories are useful not only for the current information given, but also for the comparable data available by analysis of similar reports issued in past years.

Excellent as these directories are, they would offer greater usefulness if they showed: enrollment of men and women separately; enrollment by semesters and summer sessions, as well as total number of different students for the academic year. In case it proved practicable to show this more highly refined presentation of data decision would have to be made as to the basis for reporting classification of students (freshmen, sophomores, special). Moreover, effort ought to be made to set up definitions of data which would correspond with reports gathered by other agencies.

J.A.H.

Religious Counseling of College Students. Merriam, Thornton W., and Others, Washington, D.C.: American Council on Education Studies, Volume VII, Series VI, Number 4, 1943, pp. vii + 77.

This is the fourth of a series of studies on personnel work in colleges and universities sponsored by the Committee on Student Personnel Work

of the American Council on Education. The series is intended for the use of college administrators, personnel workers and faculty members. As outlined by the Council Committee, the brochures have three objectives: "first, to indicate the theory upon which certain specific personnel functions rest and to describe practices which give promise for the better performance of personnel services; second, to direct interested readers to sources of wider information; and third, to suggest administration and research developments for which still further plans need to be laid".

In *Religious Counseling of College Students,* the author and his colleagues give emphasis to the importance of religious guidance in the total program of higher education. After defining a religious adjustment problem, the author discusses the more important principles on which religious counseling is based, and follows with a discussion of the recognized procedures for religious counseling.

A second chapter is concerned with a statement of some of the religious problems of students with which the counselor is confronted, and further suggests the kinds of knowledge and understanding the counselor must acquire successfully to meet these problems.

A third chapter sketches the historical background of the relationship between religion and higher education. Against this background is projected the question of the responsibility of higher education for providing religious counseling. It is the point of view of the author that this is an obligation which institutions of higher learning must accept. Assuming the acceptance of this responsibility, a practical program is suggested which the college or university may follow.

The concluding chapter discusses some of the current developments in both higher education and religion which indicate the necessity for and make possible collaboration in a program of religious counseling.

The author and his advisory committee have clearly demonstrated the importance of religious counseling in any program of higher education, and have provided the religious counselor with an excellent discussion of the principles and techniques on which his work is based. In view of the unusually perplexing problems with which the college student is faced today, this study is particularly timely.

The brochure also includes a list of books which the counselor will find helpful to himself and to the students with whom he is working.

PAUL H. YOUNGER
Allegheny College

Principles and Techniques of Guidance. Lefever, D. Welty, Archie M. Turrell, and Henry I. Weitzel. New York: Ronald Press, 1941, pp. xvii + 522.

This is an excellent text in the field of guidance with particular attention

given to the problems of the secondary school. The authors suggest the following purposes for their contribution:

"This book has been designed in terms of the needs and interests of several groups: (1) cadet teachers preparing for service in the classroom for whom an introduction to the place and importance of guidance in education is obviously important; (2) experienced instructors who are interested in their own professional growth and increased effectiveness as teachers; (3) counselors-in-training specializing in the science and art of guidance; (4) counselors-in-service who desire to use the latest and most effective techniques and to develop greater skill in counseling; and (5) members of administrative and supervisory groups who need to understand the aims and procedures of the guidance program, so that guidance activities may make their greatest contributions."

The book is divided into four parts. Part I, dealing with "Points of View," indicates that the authors have taken what might be called a catholic point of view toward the place of guidance. By so doing they have written a book which is serviceable to the teacher today and one which looks forward to improved guidance services in the future. Beginning with a consideration of what can be done in the present situation they have gone on to suggest how a guidance program can become more adequate. Chapter three, dealing with principles of guidance, is particularly good. The first four of these principles which are particularly related to basic assumptions should be universally accepted by all educators:

"(1) Guidance is a lifelong process

(2) The guidance service should be extended to all, not simply to the obviously maladjusted

(3) 'Guiding' in the absence of data is quackery

(4) Special training is needed to do guidance work"

Part II is concerned with "Personnel" and portrays the role of the teacher, then that of the specialist and finally the function of administration. The viewpoint relative to each of these can best be gained through the following quotations:

"The basic approach must be one of changing the emphasis in teaching rather than merely listing, analyzing, and delegating functions."

"One of the counselor's greatest contributions will consist in the development of a guidance program and the co-ordination of all levels of personnel service both in the school and in the community. This contribution should be based not on fancied superiority of title, but on recognized professional competence as a specialist."

"Guidance cannot be confined to one office, such as that of the principal or the counselor. Every officer and every teacher in the secondary school has a role to play in making guidance effective."

In Part III, "Plans", the authors set forth various elements which go

to make up a complete guidance program. Attention is given to vocational guidance, social and civic guidance, recreational guidance and physical health. The needs of pupils are given fundamental consideration throughout the entire book. An interesting chapter is the one describing practices in selected schools of various sizes.

Part IV deals with "Procedures" or, as commonly called, techniques. The place of records and the uses of tests are treated at length. A chapter is developed on the group approach to guidance in which the authors suggest how group guidance activities may be carried on in the varied aspects of the entire school program.

In the chapter on individual counseling ten basic problem areas are treated. Then many cases are set forth illustrating how certain problems are approached in each of these areas. Almost one hundred cases are discussed, each one briefly. The last chapter is a rather stimulating one entitled, "The Growing Challenge to Guidance." Three valuable questionnaires appear in the appendix.

This book is certainly one of the best books in the field of guidance which has been written in the last few years. It is written in a fashion which will be interesting and helpful to those concerned with acquiring an understanding of the meaning and place of guidance in the modern secondary school.

S. A. HAMRIN
Professor of Education
Northwestern University

Honorary Degrees: A Survey of Their Use and Abuse. Epler, Stephen Edward, Washington, D.C.: American Council on Public Affairs, 1943, pp. 224.

When Harvard University in 1692 conferred honorary degrees on its President and the two tutors then constituting its faculty, it introduced into the field of higher education in America an unprecedented practice. Although the growth in number and nomenclature of honorary degrees was slow for many decades, by 1939 approximately 200 varieties had been conferred on more than 50,000 individuals by colleges and universities in this country.

For an intensive study of the practices and policies relating to honorary degrees, Dean Epler has chosen seven institutions: Harvard and Columbia Universities, Smith College, and the Universities of North Carolina, Wisconsin, California and Nebraska. His detailed analysis covers five representative periods, beginning with the years before 1787 and closing with the decade following the first World War. Supplementary information on contemporary practices of over 200 institutions, combined with the opin-

ions of college and university presidents, and leaders in representative non-academic fields, further adds to the inclusiveness of his investigation.

Dean Epler discusses the trends in the number and kinds of honorary degrees conferred, the decline in the bachelors, masters and M.D. degrees, and the increase in other doctors degrees; the maintenance of the D.D. in first position until 1910 when it was surpassed by the LL. D. in frequency. He reviews the types of recipients throughout the various periods covered by the study and the factors which influenced the awards. An interesting chapter is devoted to the vigorous opposition to the honorary Ph.D., with such effective protestations from those with earned doctorates and from professional bodies that by 1910 "it became unseemly to confer the Ph.D. as an honorary degree".

He also deals effectively with the influences of the business era of 1900-1928 and the effects of the admission of the business man to the academic fold via the honorary degree. Current practices and opinions relative to honorary degrees are revealed by college presidents and other recognized leaders.

Quotations from letters received from those interested in having honorary degrees conferred on their friends, and correspondence relative thereto, together with expressive sketches depicting the commencement scene when the degree is conferred, contribute greatly to the reader's insight and enjoyment.

While the data point to the conclusion that honorary degrees should be discontinued, and in this the author would concur, he is not unmindful of the motives which have led to this practice, and not being unrealistic, very constructively offers recommendations which would lead to a lessening of their abuse.

E.E.D.

The Colleges and the War Effort

Selective Service

A directive from General Hershey, Director of the National Selective Service, in a telegram to all State Directors of Selective Service, has modified existing factors in regard to college student deferment, as follows:

1. It eliminates the date July 1, 1945 (by which time the student, to be eligible for deferment, must have completed his training), and substitutes a continuing policy: A student is eligible for deferment if he can complete his training within twenty-four months after certification.

2. It eliminates from consideration for deferment heating, ventilating, refrigerating, air conditioning, safety and transportation engineers, and adds agricultural engineers.

3. In regard to pre-professional students in medicine, dentistry, veterinary medicine, osteopathy, and theology, it likewise eliminates the date July 1, 1945, and substitutes twenty-four months from the time of certification; and substitutes for the phrase "unqualifiedly accepted for admission" by such schools, the less restricting phrase "certified by a recognized medical, dental, veterinary, osteopathic, or theological college that he is accepted for admission and will be admitted to undertake professional studies upon completion of his pre-professional work."

4. For students of forestry, pharmacy, optometry, and agricultural sciences, it substitutes for the limited deferment (July 1, 1945) the same continuing policy of twenty-four months from date of certification. For this group of essential fields it adds a qualifying limitation by setting a quota for each institution: That the number of students in the freshman or first year class in any one of these professional schools shall not exceed 150% of the average number of students graduating at the bachelor's-degree level from that institution over the three years stipulated—1939-40, 1940-41, 1941-42.

The Canadian Draft and College Students

The JOURNAL is indebted to E. F. Sheffield, Registrar, Sir George Williams College, Montreal, for the following statement regarding military service of college students in the Dominions.

I. CALL-UP REGULATIONS AFFECTING MALE STUDENTS

The government's regulations are designed to allow able students to go to college and to remain there until graduation, without interruption by call-up for military service.

Certain conditions, however, must be fulfilled:

1. The student must be enrolled in a day college, in a full-time course leading to a degree.
2. Unless he is found to be physically unfit by an army medical officer, he must take at least 110 hours of approved military training along with his studies in each college year, followed each summer by two weeks at a military training camp.
3. He must pass each progress or final examination while in college, or present a valid reason for absence or failure.
4. He may not change his course of studies without the approval of the college and military authorities.

If all of these conditions are fulfilled, a student who receives notice to take medical examination for military service may have postponement of military service arranged by taking the notice to the Registrar of the college in which he is studying.

II. SPECIAL REGULATIONS FOR MALE SCIENCE STUDENTS

Male students, studying full-time in degree courses in science or engineering (except those preparing for admission to the study of medicine, dentistry, pharmacy and such professions), are asked, when they enter the course, to declare whether or not they wish to enlist as technical officers in some branch of the armed forces upon graduation.

Those who indicate that they do so desire are interviewed by representatives of the armed forces before graduation and, if they are found suitable, may be commissioned as technical officers after graduation. Those who do not volunteer to enlist as technical officers will be directed into a restricted list of essential industries upon their graduation. No member of either group, so long as he remains a science student in good standing, may accept other employment (except during the summer vacation, and even then he is directed to essential industry) nor may enlist nor be commissioned in any of the armed forces without special permission from the Wartime Bureau of Technical Personnel of the Department of Labour.

It is apparent that these regulations are designed to make the best

possible use of technically trained men and to prevent any misuse of their abilities.

III. PROVISIONS FOR THE EDUCATION OF MEN AND WOMEN DISCHARGED FROM THE ARMED FORCES

Students who wish to go to college, but who decide to enlist in the armed forces before entrance to college, or before graduation from a college course, should know that liberal arrangements have been made by the government to help them finance their interrupted education after their discharge.

Any man or woman who has been in the armed forces may claim government assistance for the continuation of college studies, providing he or she enters college within fifteen months of the date of discharge. Assistance, which includes the payment of tuition fees plus a weekly subsistence allowance, may be continued for one year, or for a period equal to the length of service in the armed forces, whichever is the lesser. Extension of the period of assistance is possible, however, for students who show ability and promise, and those who do well may expect assistance through to graduation.

Arrangements for such governmental assistance should be made through the Veterans' Welfare Division of the Department of Pensions and National Health which has offices in most large centers of the country.

Activities and Plans of Higher Education for the Post-War Period

Those who are interested in this topic would do well to write the American Council on Education, Washington, D.C., for a copy of their Bulletin No. 55 of the series, Higher Education and National Defense, under the title "Activities and Plans of Higher Education for the Post-War Period."

Institute for Administrative Officers of Higher Institutions, University of Chicago, July 8-9, 1943

The following summary statement was furnished by Clark Tibbitts, Director of the University War Board and Assistant Director of the Division for Emergency Training of the University of Michigan.

This brief summary is intended as a preview of the official report of the Institute which will appear after this issue of the JOURNAL.

Lt. Comdr. Ralph Sentman, U.S.N.R. "The Program of Voluntary Education in the Armed Forces." Enlisted personnel in all service branches studying mathematics, languages, technical subjects, and others in bases over entire world. Both group instruction and individual correspondence study with self-teaching texts. High school and first two years of college.

War Information (response to demand) through bulletins, lectures, seminars.

Credit—Some want credit *now* (especially high school) to qualify for advancement.

Job descriptions will be given at discharge. Exact nature of duties, kind and length of training, etc.

Lt. Col. H. G. Espy, U. S. Army. "The Correspondence Study Program of the Armed Forces Institute." Thousands studying code and languages with records. Correspondence study about 30,000 at one time, but mainly from A.F.I. Espy urges colleges to take the initiative in calling attention to their own courses when students leave the campus and to advise what to take. Should take materials with them to avoid shipping difficulties.

Credit. Tests given by commanding officers. Course descriptions and test results reported to colleges by A.F.I.

Extension of Program. Standardized courses being developed for overseas use. Military will subsidize payments to colleges supervising the work.

T. R. McConnell, Minnesota. "The Program of General Education at the College Level for Men in the Armed Forces." To forestall decline of liberal education. Report available soon. Correspondence and group study courses (aimed at grades 11-14) being outlined on American life and institutions, problems in American life, America in international affairs, science, literature and arts.

Floyd Reeves, University of Chicago. "Utilization of Educational Institutions after the War." Several million unemployed in post-war period. Education should be regarded as a public work program to "employ" all who can profit from it. Free tuition and maintenance. All levels with greatest increase in vocational schools at junior college level. Rehabilitation now under way, supervision of U. S. Veterans Bureau.

Carter Davidson, Knox College. "Experience of a Liberal Arts College with Army Programs." Shifted personnel via refresher courses. No financial loss.

H. T. Heald, Illinois Institute of Technology. "Experience of a Technical Institute in Army Programs." I.I.T. took over George Williams College for elementary V-12 courses. Great difficulty in fitting advanced men into appropriate courses because of varied background.

Navy paying $20 per month per man pending contract negotiations. Expects to pay more.

Harry K. Newburn, Iowa. "Experience of a State University in Army and Navy Programs." Advanced Engineering placed in Engineering College; Army Basic, Meteorology, etc. in Liberal Arts. Each program under teaching co-ordinator who is member of committee including registrar and testing bureau.

Student personnel. Problems of morale and academic classification. *Teaching personnel.* Refresher courses for faculty. No added payment for contract teaching. *Evaluation of progress.* Special University committee on examinations helps prepare tests, determines proper student placement and amount of credit to be granted. Describes standards for Army and Navy courses.

Long-time gains. Pre-war students have been underworked. Selection, well-defined course objectives, motivation, concentration of effort, and supervised study speed up progress.

George F. Zook, A.C.E. "Effects of War on Institutions of Higher Education." Demise of N.Y.A. unfortunate. Substitute programs for training civilians including draft deferment are inadequate. Post-war should see continued student acceleration and national scholarships.

Ralph W. Tyler, University of Chicago. "Military Experience and College Credit." Four types of tests developed for military. (1) Course completion tests (not for use in recommending college credit), (2) subject examinations for certifying work to high schools and colleges, (3) placement tests for demobilization (high school and college norms now being obtained), (4) technical field competence tests (for military use).

A.F. Institute building descriptions of all military courses and programs.

A. J. Brumbaugh, University of Chicago. "Admission of Non-High School Graduates." Studies from several schools indicate superior performance of such students.

War Training Programs for Women in Colleges and Universities

Those interested in the above-mentioned topics may get a summary of an investigation of this area by writing the American Council on Education, Washington, D.C., for a copy of their Bulletin No. 53 in the series, Higher Education and National Defense, entitled "A Survey of War Training Programs for Women in Colleges and Universities."

The Examinations of the United States Armed Forces Institute

The work of the United States Armed Forces Institute deserves the wholehearted co-operation of every registrar who is interested in the professional administration of college credits for services in the armed forces, and for studies carried on while enrolled in the armed forces. A copy of the pamphlet carrying the heading at the head of this section may be received by writing the Examination Staff for the United States Armed Forces Institute, Board of Examinations, University of Chicago, Chicago, Illinois.

R. L. W.

In the Journals

"The Future of the Liberal Arts," Broudy, H. S., *Educational Forum,* Vol. VII, No. 4, pp. 351-354, May, 1943.

The liberal arts, as such, have been brushed aside in most of the programs of war-time education. There is reason to suppose, moreover, that the stress on specialized skills, far from disappearing after the war, will be augmented by it. "Each individual will require specialized training to get and to hold any save the most menial of jobs. All this will mean 'education' . . . but there is little evidence that it will be liberal arts education." There is, moreover, reason to doubt whether "the leisurely four-year rather general background-building type of learning" will be able to survive. This is the unencouraging outlook which faces the liberal arts. Those who are concerned with their preservation should be planning their campaign. "What that campaign will be I do not profess to know, but this much can be said: Any course of education which promises to make men wiser, better, and happier will not go unnoticed in our country; any system which fulfills that promise need never worry about a future. The problem of the post-war world will be control of technology and science in the interests of the good life. The better our technicians become, the better our citizens will have to become if we are to avoid chaos. To produce men and women who can think out the ways and means of using the new technology for human good and happiness is the new task of the liberal arts. In other words, there will be need of a crusade after the war to prevent man's complete enslavement to the machine. The liberal arts did not prevent the initial stages of that enslavement, which was in progress long before the present war; it will have a gigantic task to prevent it after the war. But perhaps a big job is just what the humane studies need for their preservation at this stage of history."

"Essentials of a Post-War Educational Program," Douglass, Harl R., *Educational Forum,* Vol. VII, No. 4. pp. 369-374. May, 1943.

Starting with the premises (a) that a terrible depression and widespread unemployment are inevitable after the war, and (b) that the American electorate "understands only hill-billy bands, wisecracks, and demagogic appeals . . . on the level of fifth-grade social intelligence," Mr. Douglass offers as a remedy an educative program in which everything is to center around and be subordinated to the study of the social sciences.

"Education for Tomorrow," Maritain, Jacques, *The Yale Review,* Vol. XXXII, No. 4, pp. 670-680, Summer, 1943.

"If mankind overcomes the terrible threats of slavery and dehumanization which it faces today, it will thirst for a new humanism, and be eager to rediscover the integrity of man, and to avoid the cleavages from which the preceding age suffered so much. To correspond to this integral humanism, there should be an integral education. . . . Education must remove the rift between the social claim and the individual claim within man himself. It must, therefore, develop both the sense of freedom and the sense of responsibility, human rights and human obligations, the courage to take risks and exert authority for the general welfare and the respect for the humanity of each individual person."

Other cleavages which education must bring to an end are that between "religious inspiration and secular activity in man" and that between "work or useful activity and the blossoming of spiritual life and disinterested joy in knowledge and beauty. Here we perceive the genuinely democratic character of the education of tomorrow. Everyone must work. . . . But work is not an end in itself, work should afford leisure for the joy, expansion, and delight of the spirit. . . . Only that leisure, however, is suitable to what is most human in man, and is of greater worth than work itself, which consists of an expansion of our inner activities in enjoying the fruits of knowledge and beauty. Liberal education enables man to do so." Liberal education should be extended to all. The capacity to accept and profit by it is not limited to the children of the wealthy, indeed, the opposite is more nearly true.

Special tasks are imposed upon education by the present crisis of civilization, and the "necessity for democratic states to rebuild themselves according to new patterns." . . .

"It is clear that for the educational body as well as for the individual citizen, freedom, rights, and autonomy have responsibilities, duties and moral obligations as their correlatives. . . . Political authority is not opposed to human freedom, but is required by it. . . . But . . . without the right to be obeyed by virtue of man's moral conscience, . . . power of compulsion is but tyrannical." . . .

"The educational body, to the very extent that it is free and autonomous, is bound in conscience to the common good. . . . Political authority . . . has not only to protect the freedom of teaching but also to guide it towards the good of the whole, as far as a matter essential to the very life of the whole is involved." . . .

"Peace . . . will not be a static but a dynamic and militant peace, which will require a tremendous effort of moral, social, and political reconstruction as well as of defense against the remainders of those egotistic and anarchical trends and that greed for domination which poison the world today. The freedom enjoyed by education, therefore, will . . . be a tense and fighting one. . . . Democracies are aware today of their long careless-

ness in failing to defend and stress their own principles, their own intellectual and moral roots, in their own schools. They do not need to borrow totalitarian methods in order to remedy this lack. The great thing is that the democratic state itself have its own philosophy of life and of society, and have faith in it." . . .

"The present war has created an immense need for technology and technical training. This need must obviously be satisfied, because of public emergency, while we maintain as far as possible the root exigencies of education. But after the war, however great the need for technicians may be, it would be an irremediable mistake not to return to the primacy and integrity of liberal education. Supposing that the training in liberal arts may be completed at nineteen, according to our ideal curriculum, enough time would remain thereafter for any intensive technical training, and this training itself should keep pace with a free and disinterested cultivation of the spirit."

"The College in War—and After," Friley, Charles E., *The North Central Association Quarterly,* Vol. XVIII, No. 1, pp. 11-15, July, 1943.

The colleges and universities of America have made an outstanding contribution to the winning of the war. "Never in our history has any agency or group of institutions responded to a grave emergency with greater spontaneity, less ostentation, and with greater effectiveness." Students and faculties alike "took their places in industry, in government, and in battle." College laboratories with their staffs, college housing and instructional facilities, and adult education and extension agencies have all been playing a vital part in the war effort. All this has been done under heavy pressure, without the benefit of previous planning or experience to serve as a guide, and without serious sacrifice of the interests of civilian students.

"I find myself in complete disagreement with those who are fearful that higher education, and particularly the liberal arts, will not be able to survive the shocks of this current and greatest tragedy of mankind. The history of the past eight hundred years shows conclusively that the colleges and universities have been among the most stable of all the institutions of civilization. They have survived wars, pestilence, and famine; they have overcome internal strife and dissension; they have successfully resisted attempts at political usurpation of their prerogatives; they have protected and preserved the dignity of the human spirit and the integrity of the human intellect. True, they have here and there been temporarily submerged by tyranny and intolerance but they have inevitably risen again from the ashes of persecution and sacrifice; for truth is eternal and hope and faith do not perish. . . .

"There are grave and pressing reasons for beginning promptly to consider what sort of world we shall face when peace comes, and what shall be our role as educators. The post-war world will present to us problems of far greater complexity, confusion and chaos than we have ever known or perhaps imagined. . . . Not long ago a prominent student of political science wrote these words:

> 'The old world is dead. The future lies with those who can resolutely turn their backs on it and face the new world with understanding, courage and imagination.'

"The most impressive thing about this statement is its cosmic confusion and its complete error of insight. As a text it covers with sinister accuracy the designs of the paranoiac architects of the New Order in the Old World. But it is impossible to deny and repudiate the past because of its intimate relationship with the present and the future. True, the Old World is in many respects the source of our present evils and weaknesses, but it is equally or even more the source of our security and hope, and of those instincts, qualities and capacities of creative individual integrity, intelligence, responsibility and co-operation by which we shall conquer those evils and build the future. We cannot disregard the continuity of the human spirit in any aspect of civilization."

The educational world has "an unsurpassed opportunity to make an enduring contribution to the material and intellectual reconstruction and the revival of faith and justice that must characterize the difficult years ahead." But this implies a challenge to education to divest itself of any ideas or practices which may hamper it. We must reaffirm our position and restate our ideals; we must restudy our policies and improve our methods by every means at our command. "The task ahead of us will tax to the utmost our abilities and resources. . . . But the high goal for which we are striving is fully worth all our effort."

In the Office

Allegheny College has adopted the following certificate to be issued to students leaving to enter the Armed Forces:

ALLEGHENY COLLEGE

THIS IS TO CERTIFY THAT

A STUDENT OF ALLEGHENY COLLEGE

HAS LEFT IN GOOD STANDING

TO ENTER

All his records will be preserved, and he is eligible to re-enter the College at any time after leaving the Service.

PRESIDENT

MEADVILLE, PENNSYLVANIA

Air Force Examination Indicated Trainees' Grades at College

There are on the campus of the Pennsylvania State College six different service groups taking as many different programs. One of the groups is made up of men of the Air Corps who came to the campus originally 500 strong with an additional 100 arriving shortly thereafter so that there are supposed to be on the campus at all times 600 members of the Corps.

This first 600 was divided into five groups who were to leave State College beginning the seventh week after their arrival in groups of 120 at four-week intervals. On several occasions this four-week interval has been shortened, but the number of men arriving has approximated the number leaving.

During their stay at the College the trainees studied various academic courses including in every instance mathematics and physics, and certain other courses such as medical aids, navigation aids, civil aeronautic regulations, etc.

When the trainees arrived at the College there accompanied them, in addition to their regular army record card, an answer sheet to an examination known as the Air Corps educational examination, 20A. This examination, which had never been seen by any member of the faculty at The Pennsylvania State College, is made up of five parts and includes sections on history, mathematics, physics, geography, and reading comprehension. The total scores ranged from the low 20's to scores in excess of 130. No member of the faculty at the College has access to the scores and therefore all grades received at the office of the Registrar were sent in without the scores, in any way influencing the grades.

At the present time a total of 582 members of the Air Corps have left State College. This group of trainees is distributed on the basis of the total score on AC-20A. The number of persons in the several groups and the average grade made by these groups is as shown on the following table:

Score on AC-20A	*Number*	*Average Grade at the Pennsylvania State College*
21–30	1	66.5
31–40	31	71.7
41–50	79	72.6
51–60	134	75.5
61–70	136	75.5
71–80	99	78.1
81–90	51	77.5
91–100	32	81.9
101–110	11	87.5
111–120	5	87.2
121–130	2	91.5
131–140	1	92.6
Total	582	

No doubt statisticians will find fault with the above table since there is no uniformity in the number of subjects taken nor in the number of hours spent on the subjects, but it seems to the writer that the steady upward progression of the averages paralleling the regular progression of scores in AC-20A speaks for itself.

WM. S. HOFFMAN, *Registrar*

EDITOR'S NOTE: After the above report was in type, Mr. Hoffman sent us the following interesting corroboration of his conclusions: Each group of 120 Air Corps trainees has been divided into four equal sections upon their arrival on this campus. The sections have been numbered consecutively and it has been the practice to arrange the students in order of ability as established by the Air Corps examination AC-20A, the lowest numbered section in each group being the ones with the highest average score on the test. The latest group to arrive on the campus was, inadvertently, not arranged in this order and no department was informed, therefore, of the disarrangement. Under the old method the four sections, numbers 83, 84, 85, and 86, would be expected to secure averages in descending scale beginning with section 83. The grades attained by one department for these four sections did not arrange themselves in this order and the professor in charge of the work called the office of the Registrar stating that for once the method did not check and, further, that the averages made by the various sections arranged the sections in the following order: 84, 86, 83, and 85. This is, however, the actual order of merit in which the sections would have been arranged had they been arranged on the basis of scores made in AC-20A. In other words, four sections which began their work on August 23 were discovered to be, in only the third week in the course, in the same order as their AC-20A examination scores would place them.

Reported to Us

E. B. Lemon, registrar at Oregon State college for the past 21 years and a former vice-president of the American Association of Collegiate Registrars, has been named dean of administration of Oregon State college.

In this new position, which has just been created, Dean Lemon will continue as co-ordinator of the specialized army training programs on the campus but will, as rapidly as possible, also give attention to campus organization work and improvement of instructional service. He will also retain supervision of the registrar's office and take over many of the duties formerly assigned to the executive secretary of the college, a position which is now unfilled.

Dr. D. T. Ordeman, associate professor of English, has been appointed as associate registrar to devote half time to that office. Dr. Ordeman has been on the college staff since 1927. He received his bachelor and master's degrees from Washington and Lee university and his doctorate from the University of Maryland.

Dean Lemon has been prominent in the national and Pacific coast registrars' associations for many years. In addition to serving as a national vice-president, he has also been president and secretary of the Pacific Coast Association of Collegiate Registrars and chairman of most of its committees.

John N. McDonnell, Assistant Registrar, Philadelphia College of Pharmacy and Science, is now a member of the Research Staff of the Drugs and Chemical Division of the War Department.

Hurst R. Anderson, formerly Registrar and Administrative Co-ordinator, Allegheny College, took office August 15 as President of Centenary Junior College, Hackettstown, New Jersey. His successor at Allegheny is Paul H. Younger.

After thirty years of service as Registrar of Kansas State College of Agriculture and Applied Science, Miss Jessie McDowell Machir retired June 30 and became Registrar Emeritus. Her successor as Registrar is Miss Mary Kimball.

J. A. Chase, Dean and Registrar, University of South Carolina, is now co-ordinator of the various Naval College Training programs on that campus. W. H. Callcott is Acting Registrar.

Miss Marthe Quinotte, Registrar of St. Joseph's College for Women, Brooklyn, New York, resigned July 1 to enter the personnel field. Her

successor is Miss Margaret Kilboy. Miss Winifred L. Meade, who was Miss Quinotte's assistant, is now Mrs. Edward Burke and has been succeeded by Miss Kathleen Lambert.

Miss Pearl Fowler, formerly Recorder in the Registrar's office of the University of Louisville, is now Assistant Registrar. Miss Mary Compton and Miss Norma Smith are recent additions to the Registrar's staff.

The Executive Officer of the Navy V-12 Unit at Miami University is Lieut. Commander Harold F. Taggart, who in civil life is Dean of Men, San Mateo Junior College, California. His Personnel Officer is Lieut. L. A. Greenlee, Assistant Registrar, Iowa State College. The 400 WAVES in the Navy Radio School are under the command of Lieut. Bernice D. Lill, Registrar, Sweet Briar College, Virginia.

Ralph E. Hill, Registrar, University of Louisville, recently conducted an investigation to find out how widespread is the practise of admitting holders of the Ph.D. degree to classes without payment of fees. His report follows:

Only six out of twenty-one schools questioned extend to holders of the Ph.D. degree the privilege of attendance without paying fees, and in those six cases the privilege seems to be limited to those who wish to do post-doctoral research in the advanced field of their previous major interest. As stated by the Ohio State University, "The special privileges are not accorded to persons who have changed their interests and are making up deficiencies or supplementing work which they should have formerly done."

President Charles Calvert Ellis, of Juniata College, Huntingdon, Pennsylvania, retired on September 1.

Edward T. Downer has resigned his position as Registrar at Cleveland College of Western Reserve University, and has been succeeded by Miss Matilda J. Jameson. Mr. Downer is now Regional Consumer Officer, in charge of consumer education in Ohio and neighboring states, under the O.P.A.

The following note reaches us from "Bill" Hoffman:

On July 9, 1943, the *Philadelphia Inquirer* contained a rather interesting puzzle entitled a Twistagram and copyrighted by J. Langdon Sullivan. Mr. Sullivan has granted me permission to print the Twistagram in whole or in part, but this is not necessary in order to bring an interesting word to the attention of our Association.

Essentially, the Twistagram is a revamping of the old anagram puzzle whereby a word may be made into a new word by the addition of a single

letter. The word "partial", with seven letters, is to be increased to an eight letter word by the addition of one letter and the new word was defined as "resident within the buildings of Penn State." Since this is a syndicated feature it naturally caught the eye of many of our alumni throughout the country. Not wishing to wait till the next day to see the answer, and after consulting various members of the faculty, I finally called my predecessor, Professor A. H. Espenshade, and he replied immediately with the word "parietal", for which word *Webster's Collegiate Dictionary* gives as a third definition:

> 3. U.S.—Resident within, or pertaining to life within, the buildings of a college.

We don't know why the puzzle limited the word to but one college, but it did arouse our curosity. Here at the College we suspect that the use of "parietal" in this sense could be traced back to a single institution as can the word "practicum" which was devised by Dr. Pugh, the first president of the Pennsylvania State College, in order to distinguish between work in a field or shop as opposed to work in a laboratory.

Cora May Hanson has resigned as Registrar of Westminster College, Salt Lake City, and is now an Ensign in the WAVES.

Mother Antonius Kennelly, Ph.D., was inaugurated on August 24 as President of the College of St. Catherine, St. Paul, Minnesota.

George L. Metz, of Clemson College, South Carolina, is on leave of absence from his Registrar's work and for the duration is serving as Educational Adviser to the STAR unit at Clemson.

Irvin Hoff, Registrar of the University of Washington, is on leave for the duration, and is working with the Office of Price Administration.

John R. Richard, Director of Student Personnel, Wayne University, is now on active duty with the Navy.

Because of his new responsibilities, noted above, E. B. Lemon has found it necessary to resign from the Board of Editors of the JOURNAL of which he has been an extremely active and valuable member. John A. Anderson of Pasadena Junior College assumes the duties of Professional Reading Editor, formerly held by G. W. Rosenlof of the University of Nebraska. Mr. Rosenlof continues on the staff as an Associate Editor.

The American Humane Education Society announces its new annual contest for the most outstanding contribution to Humane Education. Open to all educators, the Society will award each year a 14-karat gold key (to be known as the National Humane Key), inscribed on one side with name

and date of the winner, and in addition two hundred dollars ($200.00) in War Bonds or cash.

Entries may include projects on a humane theme, humane plays or stories, original methods of teaching Humane Education, theses on Humane Education.

This year's contest closes April 30, 1944. All those wishing to enter the contest are urged to write at once to the National Humane Key Committee, 180 Longwood Avenue, Boston 15, Mass., for entrance blank and rules of the contest.

Reprints of Dr. Tyler's article, *Appraisal of Military Training and Experience,* in the last number of the JOURNAL, are still available, and may be obtained without charge by addressing the Editor.

W.P.B. restrictions on the use of paper for magazine consumption have so far not affected the JOURNAL because the total number of pages published in 1943 has been considerably less than in 1942, due largely to the omission of the annual convention. If the allotment for 1944 is based upon the amount used in 1943, some adjustment will probably be necessary. This will explain any modifications in format or pagination which may be noted in forthcoming issues. Similarly, W.P.B. regulations may bring about a change in the weight or quality of the paper to be used in this or succeeding numbers.

The Question Box

1. *Would it be advisable for all colleges having a Navy V-12 Unit, to adopt a unified calendar, and if so, what should be done now?*

A partial survey indicates a wide divergence of opinion on this point. Some institutions have gone over entirely to the Navy calendar, with terms opening in November, March, and July. In most instances a short intersession has been inserted to bridge the gap somewhere—for instance, a six-weeks session opening September 15. Denison has three semesters, September-December, January-April, May-August, each semester divided into two eight-weeks terms. Other institutions have continued with their regular calendar for civilian students, with the V-12 unit operating alongside it on its own calendar. This entails some difficulties, particularly in staff assignments, but is felt to be in the interests of a normal college life for civilian students.

2. *Are registrars of colleges with V-12 units preparing any special type of record for their use, or simply using regular forms?*

The Navy manual says that regular scholastic and personnel records are to be kept. Most institutions seem to consider it unnecessary to design special ones for V-12, but are simply using their ordinary forms. One institution has kept its usual forms, but all blanks for V-12 use—permanent records, class lists, absence reports, etc.— are printed on stock of a distinctive color.

3. *Are colleges having Army and Navy units getting extra office help, either from their own resources or from the Services?*

In general, no. The falling-off in civilian students apparently has reduced demands on office staffs sufficiently to compensate for the additional work entailed by the Service units. (And if you needed extra help, where would you get it?)

4. *What is the procedure as to giving to undergraduates signed and sealed transcripts of credit to present at time of induction?*

Apparently institutions which have refused to issue such transcripts to undergraduates in the past have been obliged to relax their rules in the case of students going into military service. The Army and Navy want transcripts presented immediately upon induction. It seems unfair to deprive students of the advantages which may accrue to them from possession of transcripts to be presented instantly upon request.

5. *Differentiate between "proficiency examinations" and "advanced standing examinations". What percentage of credits is allowed by proficiency examinations?*

Proficiency examinations are intended to determine the student's level of achievement for proper placement in advanced courses, but with no thought of credit. Advanced standing examinations are used to validate credit earned in unaccredited institutions or otherwise.

6. *Do you have any information on practices concerning expanded physical education programs? Is additional credit for this work being given? To what extent? If such credit is given, does it displace other requirements or is it in addition to former requirements for graduation? Are such expanded programs for men and women or for men only? Are they compulsory?*

In expanding physical education programs, institutions seem to have followed their original practise as to granting credit. If credit is allowed, graduation requirements have been correspondingly raised, so that the net result is the same. Most, but by no means all, of the expanded programs are for men only. The JOURNAL does not know of any institution which has increased its program without making the additional physical education compulsory.

7. *What is the best means of securing the full co-operation of every faculty member in following the routine necessary for efficient service through the Registrar's office?*

Anybody who can answer that one is entitled to a Ph.D. But many Registrars have answered it, each in his own way. The answers range all the way from intimidation and browbeating to cajoling and bribery. Probably the most successful Registrars are those whose co-operation with the faculty is so ready and so whole-hearted that it brings spontaneous co-operation in return. Faculties being what they are, however, even such Registrars probably are obliged to point out to an occasional recalcitrant professor that he cannot expect continued courtesy unless he repays it in kind.

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(Changes should be reported promptly to the Regional Associations Editor)

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EDITOR'S NOTE: *Every effort has been made to bring this list up to date. It is probable, however, that not all changes have been reported. Please send corrections to Mr. S. Woodson Canada, University of Missouri, Columbia, Mo.*

The individual in whose name membership is held bears the title of Registrar unless otherwise indicated

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Colorado School of Mines, Golden, T. C. Doolittle
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Colorado State College of Education, Greeley, R. N. Carson
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Howard University, Washington, F. D. Wilkinson
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Southeastern University, Washington, Lucile Clagett
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Wilson Teachers College, 11th and Harvard Sts., Washington, C. M. Huber

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National College of Education, Evanston, M. Frances McElroy
North Central College, Naperville, C. C. Hower, Acting Registrar
Northern Illinois State Teachers College, DeKalb, Edith Leifheit
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Southern Illinois State Normal University, Carbondale, Marjorie Mae Shank
Thornton Township Junior College, Harvey, William E. McVey
University of Chicago, Chicago, Ernest C. Miller, Registrar; Valerie C. Wickhem, Director of Admissions
University of Illinois, Urbana, G. P. Tuttle
Western Illinois State Teachers College, Macomb, Hertha Voss
Wheaton College, Wheaton, Enock C. Dyrness, Vice-President
Woodrow Wilson Junior College, Chicago, J. Anthony Humphreys
Wright City Junior College, Chicago, Alice J. Griffin

INDIANA

Anderson College, Anderson, Leona Nelson
Arthur Jordan Conservatory of Music, Indianapolis, Stanley Morris
Ball State Teachers College, Muncie, W. E. Wagoner
Butler University, Indianapolis, C. R. Maxam
DePauw University, Greencastle, Veneta J. Kunter
Earlham College, Richmond, Opal Thornburg
Evansville College, Evansville, Marjorie Webster

Franklin College, Franklin, Virfsel Roe
Goshen College, Goshen, Paul Bender
Hanover College, Hanover, Henry W. Burger, Secretary and Registrar
Indiana Central College, Indianapolis, Mrs. Anna Dale Kek
Indiana State Teachers College, Terre Haute, Harry E. Elder
Indiana University, Bloomington, Thomas A. Cookson
Indianapolis College of Pharmacy, Indianapolis, Harriet L. Butler
Manchester College, North Manchester, Mrs. Cora Wise Helman
Purdue University, Lafayette, Ralph B. Stone, Registrar; R. B. Zumstein, Associate Member
Rose Polytechnic Institute, Terre Haute, Mary Gilbert
St. Frances College, Lafayette, Sister M. John Frances
St. Joseph's College (junior college), Collegeville, The Rev. Henry A. Lucks
St. Mary-Of-The-Woods College, Saint Mary-Of-The-Woods, Sister Celeste
St. Mary's College, Notre Dame, Sister Mary Frederick, Dean
Taylor University, Upland, J. Arthur Howard
University of Notre Dame, Notre Dame, The Rev. James Connerton, C.S.C.
Valparaiso University, Valparaiso, A. F. Scribner

IOWA

Briar Cliff Junior College, Sioux City, Sister Mary De Pazzi
Clarke College, Dubuque, Sister Mary Christella Dee, B.V.M.
Coe College, Cedar Rapids, C. H. Geiger, Dean
Cornell College, Mt. Vernon, Mrs. Grace M. MacGaw, Acting Registrar
Drake University, Des Moines, Emma J. Scott
Grinnell College, Grinnell, Bethana B. McCandless
Iowa State College, Ames, J. R. Sage
Iowa State Teachers College, Cedar Rapids, Marshal R. Beard
Iowa Wesleyan College, Mt. Pleasant, George Edward King
Kletzing College, University Park, Delbert R. Rose
Loras College, Dubuque, The Rev. F. J. Houlahan
Luther College, Decorah, O. W. Qualley
Mount St. Claire Junior College, Clinton, Sister Mary Regis Cleary
Ottumwa Heights Junior College, Ottumwa, Sister Hazel Marie Roth, Dean
St. Ambrose College, Davenport, The Rev. Edward J. Butler
Simpson College, Indianola, C. W. Emmons
Trinity College, Sioux City, Brother Gerard J. E. Sullivan
University of Dubuque, Dubuque, F. W. Kracher
University of Iowa, Iowa City, Harry G. Barnes
Upper Iowa University, Fayette, R. M. Deming
Western Union College, LeMars, Arthur H. Blue

KANSAS

Baker University, Baldwin, B. A. Gessner, Dean
Bethel College, North Newton, Luella Smith, Assistant Registrar
Central College, McPherson, Warren A. McMullen, Dean
Fort Hays Kansas State College, Hays, Standlee V. Dalton
Friends University, Wichita, Iva V. Pickering
Kansas State College of Agriculture and Applied Science, Manhattan, Mary Kimball
Kansas State Teachers College, Emporia, Ray C. Maul
Kansas State Teachers College, Pittsburg, L. A. Guthridge
Marymount College, Salina, Sister M. Madelena

McPherson College, McPherson, John W. Boitnott, Dean and Registrar
Mount St. Scholastica, Atchison, Sister Mildred Knoebber
Municipal University of Wichita, Wichita, Worth A. Fletcher
Ottawa University, Ottawa, Grace McWilliam
Sacred Heart Junior College, Wichita, Sister M. Ermenhilda
St. John's College, Winfield, W. H. Wente
St. Mary College, Xavier, Sister Ann Elizabeth Shea
Southwestern College, Winfield, William J. Poundstone
Sterling College, Sterling, Estelle Dougherty
University of Kansas, Lawrence, Laurence Woodruff
Washburn Municipal University, Topeka, I. Gladys Phinney

KENTUCKY

Asbury College, Wilmore, Mrs. Clara Mikkelson
Berea College, Berea, Adelaide Gundlach
Bowling Green Business University, Bowling Green, Nina Hammer, Business Manager and Registrar
Centre College, Danville, James H. Hewlett, Dean and Registrar
Eastern State Teachers College, Richmond, M. E. Mattox
Georgetown College, Georgetown, Ann Poindexter
Kentucky Wesleyan College, Winchester, A. J. Henderson
Morehead State Teachers College, Morehead, Mary Page Milton
Mount St. Joseph's Junior College, Maple Mount, Sister Laurine Sheeran
Murray State Teachers College, Murray, Mrs. Cleo Gillis Hester
Nazareth College, Louisville, Sister Mary Paul Walsh
Nazareth Junior College, Nazareth, Sister Julia Frances
St. Catharine Junior College, St. Catharine, Sister Albertina
Transylvania University, Lexington, V. F. Payne, Registrar and Chairman of the Faculty
Union College, Barbourville, Frank K. Burgess
University of Kentucky, Lexington, Leo M. Chamberlain
University of Louisville, Louisville, R. E. Hill
Western State Teachers College, Bowling Green, E. H. Canon
Ursuline College, Louisville, Sister M. Francelle Otte

LOUISIANA

Brescia College, New Orleans, Augusta Gardiner
Centenary College of Louisiana, Shreveport, Margaret Gray
Dillard University, New Orleans, Theresa Birch Wilkins
Louisiana Polytechnic Institute, Ruston, Mrs. Ruby B. Pearce
Louisiana State Normal College, Natchitoches, W. S. Mitchell
Louisiana State University and Agricultural and Mechanical College, Baton Rouge, Mrs. W. H. Gates
Loyola University, New Orleans, Miss Carmel Discon
Northeast Junior College, Louisiana State University, Monroe, Olive Lusk
St. Mary's Dominican College, New Orleans, Sister Mary Monica
Southeastern Louisiana College, Hammond, Ruth Carter
Southwestern Louisiana Institute, Lafayette, Olive Marie Caillouet

MAINE

Bates College, Lewiston, Mabel L. Libby
Bowdoin College, Brunswick, Mrs. Clara D. Hayes, Secretary of the College

Colby College, Waterville, Elmer C. Warren
University of Maine, Orono, James A. Ganett

MARYLAND

Goucher College, Baltimore, Carrie Mae Probst
Hood College, Frederick, Grace N. Brown
Johns Hopkins University, Baltimore, Irene M. Davis
Loyola College, Baltimore, The Rev. Lawrence C. Gorman, Dean
Morgan College, Baltimore, Edward N. Wilson
Mount Saint Agnes Junior College, Mount Washington, Sister M. Pius, R.S.M., Dean and Registrar
Mount Saint Mary's College, Emmitsburg, John M. Roddy
Notre Dame of Maryland, Baltimore, Sister Bridget Marie
Saint John's College, Annapolis, Miriam Strange
Saint Joseph's College, Emmitsburg, Sister Elizabeth Garner
Maryland State Teachers College, Towson, Rebecca C. Tansil
University of Maryland, College Park, Alma H. Preinkert
Washington College, Chestertown, William R. Howell
Western Maryland College, Westminster, Martha E. Hanahan

MASSACHUSETTS

American International College, Springfield, Mrs. Dora Martin Stryker
Amherst College, Amherst, Gladys A. Kimball, Recorder
Atlantic Union College, South Lancaster, Gerald Miles
Boston College, Chestnut Hill, Francis J. Campbell
Boston College, College of Arts and Sciences Intown, 126 Newbury St., Boston, J. Harry Lynch
Boston University, Boston, Kenneth A. Barnard, Registrar; Katherine Hilliker, Recorder, College of Liberal Arts; John Waters, Registrar, College of Business Administration; Carla Paaske, Registrar, College of Practical Arts and Letters
Bradford Junior College, Bradford, Ann Splitstone, Director of Admissions
College of the Holy Cross, Worcester, R. D. Kennedy
College of Our Lady of the Elms, Chicopee, Sister Helen Joseph
Emerson College, Boston, Mrs. Adele D. Levillain
Emmanuel College, Boston, Sister Mary St. Edward
Endicott, Prides Crossing, Eleanor Tupper, Dean
Harvard University, Cambridge, R. H. Phelps, Assistant Dean
International Y.M.C.A. College, Springfield, Albert Z. Mann, Dean
Lowell Textile School, Lowell, Ruth Foote
Massachusetts Institute of Technology, Cambridge, J. C. MacKinnon
Massachusetts State College, Amherst, Marshall O. Lanphear
Mount Holyoke College, South Hadley, Harriet J. Eustis
Northeastern University, Boston, John B. Pugsley, Director of School Admissions
Regis College, Weston, Sister Mary Mildred
Simmons College, Boston, Margaret Gonyea
Smith College, Northampton, Joy Secor
Suffolk University, Boston, Carrola A. Bryant
Wellesley College, Wellesley, Kathleen Elliott, College Recorder
Wheaton College, Norton, Sarah B. Young
Wheelock College, 47 Pilgrim Rd., Boston, Laura A. Townsend
Williams College, Williamstown, Doris Merriam, Recorder
Worcester Polytechnic Institute, Worcester, Gertrude R. Rugg

MICHIGAN

Adrian College, Adrian, W. A. Rush, Dean and Registrar
Albion College, Albion, Marvin F. Pahl
Alma College, Alma, Robert W. Clack
Aquinas College, Grand Rapids, Sister M. Blandina
Bay City Junior College, Bay City, Katherine Banta Bowley
Calvin College, Grand Rapids, Harry G. Dekker
Central Michigan College of Education, Mount Pleasant, David M. Trout, Registrar and Dean
Cleary College, Ypsilanti, Maxine L. Wilbur
Detroit Institute of Technology, Detroit, Arthur E. Johnson, Jr.
Emmanuel Missionary College, Berrien Springs, Mrs. Wanda MacMorland
Ferris Institute (junior college), Big Rapids, W. W. Manning
General Motors Institute, Flint, W. T. MaWhinney
Gogebic Junior College, Ironwood, S. E. Field
Grand Rapids Junior College, Grand Rapids, June Linderholm
Hillsdale College, Hillsdale, Florence L. Kreiter
Kalamazoo College, Kalamazoo, J. H. Bacon
Marygrove College, Detroit, Sister Miriam Fidelis
Mercy College, Detroit, Sister Mary Lidwina, R.S.M.
Merrill-Palmer School, Detroit, Maybelle B. Stevens
Michigan College of Mining and Technology, Houghton, Leo G. Duggan
Michigan State College, East Lansing, Albert Linton
Michigan State Normal College, Ypsilanti, C. P. Steimle
Nazareth College, Nazareth, Sister Marie Arthur
Northern State Teachers College, Marquette, L. O. Gant
Olivet College, Olivet, Robert G. Ramsay
Port Huron Junior College, Port Huron, John H. McKensiem, Dean
St. Mary's College, Orchard Lake, The Rev. Edward Skrocki
Siena Heights College, Adrian, Sister M. Bertha
University of Detroit, Detroit, Florence Donohue
University of Michigan, Ann Arbor, Ira M. Smith
Wayne University, Detroit, George F. Brennan
Western Michigan College of Education, Kalamazoo, John C. Hoekje

MINNESOTA

Augsburg College, Minneapolis, Martin Quanbeck
Bemidji State Teachers College, Bemidji, Mabel E. Parker
Carleton College, Northfield, Peter Olesen
College of St. Benedict, St. Joseph, Sister Rosalinda
College of St. Catherine, St. Paul, Sister Helen Margaret
College of St. Scholastica, Duluth, Sister M. Mercedes Ryan
College of St. Teresa, Winona, Sister Mary Keating
College of St. Thomas, St. Paul, The Rev. P. J. McCann
Concordia College, Moorhead, Martha Brenun
Duluth Junior College, Duluth, Raymond D. Chadwick, Dean
Duluth State Teachers College, Duluth, Myrtle S. Anderson
Gustavus Adolphus College, St. Peter, Miss Esther Kirchhoefer
Hamline University, St. Paul, Claribelle Olson
Macalester College, St. Paul, J. P. Hall
Mankato State Teachers College, Mankato, Albert B. Morris
St. Cloud State Teachers College, St. Cloud, Mary Lilleskov

St. Mary's College, Winona, Brother H. Richard, F.S.C.
St. Olaf College, Northfield, John Bly
University of Minnesota, Minneapolis, T. E. Pettingill, Acting Director of Admissions
Winona State Teachers College, Winona, Helen B. Pritchard, Secretary and Registrar
Worthington Junior College, Worthington, Ethel Racke

MISSISSIPPI

Alcorn A. & M. College, Alcorn, Horace D. Murdock
Copiah-Lincoln Junior College, Wessen, Willie H. Smith
Delta State Teachers College, Cleveland, Katie D. Mauldin
Millsaps College, Jackson, G. L. Harrell
Mississippi College, Clinton, Addie Mae Stevens
Mississippi State College, State College, Ben Hilbun
Mississippi State College for Women, Columbus, G. T. Buckley
Mississippi Southern College, Hattiesburg, Mary Pulley
University of Mississippi, University, T. A. Bickerstaff
Wood Junior College, Mathiston, Mrs. Helen Welch Seay

MISSOURI

Central College, Fayette, Martha C. Ricketts
Central Missouri State Teachers College, Warrensburg, George E. Hoover
Christian College (junior college), Columbia, J. Robert Sala, Dean
Conservatory of Music of Kansas City, Kansas City, Wilkfor Labunski, Director
Fontbonne College, St. Louis, Sister Susanne Marie Vachon
Jefferson College, St. Louis, Mrs. Ethel Hough Lewis
Kemper Military School (junior college), Boonville, F. J. Marston, Dean
Lincoln University, Jefferson City, Booker T. McGraw
Lindenwood College, St. Charles, Mrs. Helen Rose Jolly, Recorder
Maryville College, St. Louis, Mother Louise Callan, Acting Registrar
Missouri Valley College, Marshall, William R. Mitchell
Northeast Missouri State Teachers College, Kirksville, L. A. Eubank, Dean of the Faculty
Northwest Missouri State Teachers College, Maryville, R. E. Baldwin
Notre Dame Junior College, St. Louis, Sister Mary Lelia
Park College, Parkville, Elizabeth Treeman
Rockhurst College, Kansas City, The Rev. J. J. Higgins, Dean and Registrar
St. Joseph Junior College, St. Joseph, Radiance Zollinger
St. Louis University, St. Louis, Elma Poole
St. Teresa Junior College, Kansas City, Sister M. Gonzaga
Southwest Missouri State Teachers College, Springfield, Wilma Simmons
Stephens College (junior college), Columbia, W. P. Shofstall, Dean of Administration
Tarkio College, Tarkio, E. V. McCullough
Teachers College of Kansas City, Kansas City, Ruth L. Hopkins
University of Kansas City, Kansas City, Donald W. Bailey
University of Missouri, Columbia, S. Woodson Canada
University of Missouri School of Mines and Metallurgy, Rolla, Noel Hubbard
Washington University, St. Louis, George W. Lamke
Webster College, Webster Groves, Sister Borromeo Hynes
William Jewell College, Liberty, James B. Sullivan
Wentworth Military Academy, Lexington, D. C. Buck
William Woods College, Fulton, Joseph B. James, Dean

MONTANA

Carroll College, Helena, W. F. Bartholome
College of Great Falls (junior college), Great Falls, Sister Mildred Dolores
Eastern Montana Normal School (junior college), Billings, Harry N. Stuber
Montana School of Mines, Butte, W. Milton Brown, Registrar and Business Manager
Montana State College, Bozeman, W. H. McCall, Registrar; Martha Hawksworth, Assistant Registrar
Montana State University, Missoula, James B. Speer, Registrar and Business Manager
Northern Montana College, Havre, S. Kendrick Clark, Registrar and Business Manager

NEBRASKA

Concordia Teachers College (junior college), Seward, Walter H. Beck
Creighton University, Omaha, Claire McDermott
Dana College, Blair, P. V. Hansen, Acting Registrar
Doane College, Crete, Dwight G. Burrage
Duchesne College, Omaha, Mother Nora Kelly
Hastings College, Hastings, Paul W. Evans
Midland College, Fremont, G. E. Hickman
Municipal University of Omaha, Omaha, Alice Smith
Nebraska State Teachers College, Chadron, Albert E. Kent
Nebraska State Teachers College, Kearney, Edith Smithey
Nebraska State Teachers College, Wayne, Herman Baehr
Nebraska Wesleyan University, Lincoln, Helen Luschei
Peru State Teachers College, Peru, E. H. Hayward
Union College, Lincoln, Ruby Lea
University of Nebraska, Lincoln, G. W. Rosenlof

NEW HAMPSHIRE

Dartmouth College, Hanover, R. O. Conant
University of New Hampshire, Durham, E. B. Sackett

NEW JERSEY

College of Saint Elizabeth, Convent Station, Sister Helen Cecilia
Drew University, Madison, F. Taylor Jones
Georgian Court College, Lakewood, Eva M. Reiss
Hudson College, Jersey City
Jersey City State Teachers College, Jersey City, Mrs. Ruth C. Alexander
Newark College of Engineering, Newark, E. Alice Hickey, Registrar; Paul L. Cambreleng, Director of Personnel, 56 William St., Orange
New Jersey College for Women (Rutgers University), New Brunswick, Esther W. Hawes
Panzer College of Physical Education and Hygiene, East Orange, Agnes E. Burnham
Princeton University, Princeton, Wilbur F. Kerr
Rutgers University, New Brunswick, Luther H. Martin
St. Peters College, Jersey City, Richard I. Nevin, Dean
Seton Hall College, South Orange, Marie K. Fitzsimmons
Stevens Institute of Technology, Hoboken, Nichol S. Memory, Director of Admissions and Records
University of Newark, Newark, Agnes D. Watt
Upsala College, East Orange, Henry F. Arnold

NEW MEXICO

College of Agriculture and Mechanic Arts, State College, Era Rentfrow
New Mexico Military Institute (junior college), Roswell, Modene D. Bates
University of New Mexico, Albuquerque
Eastern New Mexico College, Portales, H. C. Gossard

NEW YORK

Adelphi College, Garden City, Ruth Harley
Alfred University, Alfred, W. A. Titsworth
Briarcliff Junior College, Briarcliff Manor, Helen R. Moore
Brooklyn College, Brooklyn, Samuel N. Kagen
Colgate University, Hamilton, Lida F. Kiedaisch, Acting Registrar
College of the City of New York, New York, Robert L. Taylor
College of Mount St. Vincent, New York 63, Sister Miriam Rose
College of New Rochelle, New Rochelle, Mother M. Xavier
College of St. Rose, Albany, Sister Thomas Francis
Columbia University, New York, Edward J. Grant; Barnard College (women's college), Margaret Giddings; Teachers College, Frank H. Hagemeyer
Cooper Union, New York, Miss M. S. Wolf
Cornell University, Ithaca, Eugene F. Bradford, Director of Admissions
Eastman School of Music, University of Rochester, Rochester, Arthur H. Larson
Elmira College, Elmira, Eleanor L. Stevens
Fordham University, Fordham Division, New York, School of Business, E. Vincent O'Brien, East Fordham Road, Fordham Station; Graduate School, John J. Propst; School of Education, Thomas F. Maher
Good Counsel College, White Plains, Sister M. Ambrose
Hamilton College, Clinton, Wallace B. Johnson
Hartwick College, Oneonta, F. Aurill Bishop
Hobart College, Geneva, D. R. Durfee, Admissions Officer
Hofstra College, Hempstead, Harriet E. Claussen
Houghton College, Houghton, Anne Madwid
Hunter College of the City of New York, New York, Mrs. Mary B. J. Lehn; Miss Dorothy Ball, Associate Member
Ithaca College, Ithaca, Florence M. Howland
Institute of Musical Art, Juilliard School of Music, New York, Emily Chervinik
Keuka College, Keuka, Helen M. Space
Long Island College of Medicine, Brooklyn, George H. Dwenger
Long Island University, Brooklyn, T. W. Metcalfe, Dean
Manhattan College, New York, Alfred D. Donovan
Manhattanville College of the Sacred Heart, 133rd Street and Convent Ave., M. B. Teeney
Marymount College, Tarrytown-on-Hudson, M. Regina
National Bible Institute, 340 W. 55th, New York, Louis Rasera
Nazareth College, Rochester, Sister Rose Angela
New York University, New York, Elwood C. Kastner
New York State College of Forestry, Syracuse, Raymond F. Crossman
Packer Collegiate Institute (junior college), Brooklyn, Mrs. Hazel C. Quantin
Polytechnic Institute, Brooklyn, Ernest John Streubel
Queens College, Flushing, Howard A. Knag
Renssalaer Polytechnic Institute, Troy, Mary L. Burke
Russell Sage College, Troy, Doris L. Crockett
St. Bonaventure's College, St. Bonaventure, The Rev. Aurelius Loop

St. Francis College, Brooklyn, Etheldreda A. Sullivan
St. John's University, Brooklyn, Frederick E. Kienle
St. Joseph's College for Women, Brooklyn, Margaret Kilboy
St. Lawrence University, Canton, Helen E. Whalen
Skidmore College, Saratoga Springs, Anna L. Hobbs
State Teachers College, Brockport, Blaine M. DeLancey
State Teachers College, Buffalo, Mrs. Isabel Houch Kideney
Syracuse University, Syracuse, Keith James Kennedy
Union College, Schenectady, Charles F. F. Garis, Dean in charge of Records
University of Buffalo, Buffalo, Emma E. Deters
University of Rochester, Rochester, Olive M. Schrader; College for Women, University of Rochester, Constance H. Wood
Vassar College, Poughkeepsie, C. Mildred Thompson, Dean
Wagner Memorial Luther College, Staten Island, Herbert R. Childs
Wells College, Aurora, Mary Hale Crouch
William Smith College, Geneva
Yeshiva College, New York, Jacob Hartstein

NORTH CAROLINA

Asheville College, Asheville, John Miller
Bennett College for Women, Greensboro, Willa B. Player
Davidson College, Davidson, F. W. Hengeveld
Duke University, Durham, H. J. Herring, Dean of Men
Flora MacDonald College, Red Springs, Hazel Morrison, Dean
Greensboro College, Greensboro, Letha Brock
Johnson C. Smith University, Charlotte, S. H. Adams
Lenoir Rhyne College, Hickory, E. L. Setzler
Louisburg College (junior college), Louisburg, Mrs. Margaret B. Kilby
Mars Hill College (junior college), Mars Hill, John W. Ruff
Meredith College, Raleigh, Mrs. Vera Tart Marsh
North Carolina College for Negroes, Durham, Mrs. Frances M. Eagleson
North Carolina State College of Agriculture and Engineering, Raleigh, W. L. Mayer, Director of Registration
Queens College, Charlotte, Helen T. West
Salem College, Winston-Salem, Annette McNeely
University of North Carolina, Chapel Hill, Ben Husbands
Wake Forest College, Wake Forest, G. S. Patterson
Western Carolina Teachers College, Cullowhee, Addie Beam
Woman's College of the University of North Carolina, Greensboro, Mary Taylor Moore

NORTH DAKOTA

North Dakota Agricultural College, Fargo, Alfred H. Parrott, Registrar and Secretary of the Faculties
State Teachers College, Minot, T. S. Jenkins, Registrar and Director of Extension
University of North Dakota, Grand Forks, R. O. Wilson

OHIO

Antioch College, Yellow Springs, Susan G. Fralick
Ashland College, Ashland, Miss Martha E. Holmes, Recorder
Baldwin-Wallace College, Berea, Jess J. Petty
Bowling Green State University, Bowling Green, John W. Bunn

Capital University, Columbus, R. B. Wildermuth
Case School of Applied Science, Cleveland, T. M. Focke, Dean
Cincinnati College of Pharmacy, 423 W. Eighth, Cincinnati, Alice Reckers, Assistant Registrar
Cincinnati Conservatory of Music, Cincinnati, Mildred Eakes, Educational Director
Cleveland College of Western Reserve University, Cleveland, Matilda J. Jameson
College of Mount St. Joseph-on-the-Ohio, Mount St. Joseph, Sister Maria Caritas
College of Wooster, Wooster, Arthur F. Southwick
Denison University, Granville, Donald R. Fitch
Fenn College, Cleveland, W. R. Goetsch
Flora Stone Mather College of Western Reserve University, Cleveland, Elinor R. Wells
Heidelberg College, Tiffin, I. F. Williams
Hiram College, Hiram, Lawrence C. Underwood
John Carroll University, Cleveland, Eugene R. Mittinger
Kent State University, Kent, Emmet C. Stopher
Kenyon College, Gambier, Stuart R. McGowan
Lake Erie College, Painesville, Helen B. Dunlap
Marietta College, Marietta, Lillian Spindler
Mary Manse College, Toledo, Sister M. Christina
Miami University, Oxford, W. C. Smyser
Mount Union College, Alliance, Verna Lower
Muskingum College, New Concord, Carrie E. McKnight
Notre Dame College, South Euclid, Sister Mary Aquinas
Oberlin College, Oberlin, Edith Stanley
Ohio Northern University, Ada, Mrs. Mae McAdow Fiddler, Acting Registrar
Ohio State University, Columbia, Edith D. Cockins, Registrar; B. L. Stradley, Dean
Ohio University, Athens, Frank B. Dilley
Ohio Wesleyan University, Delaware, Allen C. Conger
Otterbein College, Westerville, Floyd J. Vance
Our Lady of Cincinnati College, Cincinnati, Sister Mary Martina
St. Mary's of the Springs College, East Columbus, Sister M. Anacletus
Sisters College of Cleveland, Cleveland, Catherine Burke
Teachers College of the Athenaeum of Ohio, Cincinnati, The Rev. Carl J. Ryan, Dean
University of Akron, Akron, R. H. Schmidt
University of Cincinnati, Cincinnati, Helen H. Burgoyne
University of Dayton, Dayton, The Rev. George J. Renneker, S.M., Vice-President and Registrar
University of Toledo, Toledo, Mrs. Hazel Geiner Petcoff
Ursuline College, Cleveland, Sister Mary Grace
Western College, Oxford, Alice L. Butler
Western Reserve University, Cleveland, Dr. W. G. Leutner, President
Wilberforce University, Wilberforce, R. O. Dickerson
Wittenberg College, Springfield, Grace N. Hannaford
Xavier University, Cincinnati, Raymond Fellinger
Youngstown College, Youngstown, P. P. Buchanan

OKLAHOMA

Catholic College of Oklahoma for Young Women, Guthrie, Sister M. Basil Spresser, O.S.B.
Central State Teachers College, Edmond, A. G. Hitchcock
East Central State Teachers College, Ada, W. Harvey Faust

Langston University, Langston, Wm. H. Hale
Northwestern State Teachers College, Alva, G. C. Jackson
Oklahoma Agricultural and Mechanical College, Stillwater, H. H. Flinn, Asst. Reg.
Oklahoma Baptist University, Shawnee, Lewis E. Solomon
Oklahoma City University, Oklahoma City, L. A. Jones
Oklahoma College for Women, Chickasha, Broun H. Mayall
Phillips University, Enid, R. Walker Adkisson
Southwestern State Teachers College, Weatherford, Richard Vorheis
University of Oklahoma, Norman, George E. Wadsack
University of Tulsa, Tulsa, John E. Fellows

OREGON

Eastern Oregon College of Education, LaGrande, Lyle H. Johnson
Oregon College of Education, Monmouth, Ellis A. Stebbins
Oregon State Agricultural College, Corvallis, E. B. Lemon, Dean of Administration
Pacific University, Forest Grove, William Lee Bricker
Reed College, Portland, Margaret A. Scott
University of Oregon, Eugene, Earl M. Pallett

PENNSYLVANIA

Albright College, Reading, Wilson I. Miller
Allegheny College, Meadville, Paul H. Younger, Dir. of Admissions
Beaver College, Jenkintown, Roberta Paulhamus
Bryn Mawr College, Bryn Mawr, Marion C. Anderson, Recorder
Bucknell University, Lewisburg, Henry W. Holter
Carnegie Institute of Technology, Pittsburgh, E. K. Collins
College of Chestnut Hill, Philadelphia, Sister M. Clare Joseph
College Misericordia, Dallas, Sister Mary Rosaire, R.S.M.
Drexel Institute of Technology, Philadelphia, Helen G. Johnson
Duquesne University, Pittsburgh, J. Murphy
Geneva College, Beaver Falls, Lulu J. McKinney
Gettysburg College, Gettysburg, Clyde B. Stover
Grove City College, Grove City, Harold O. White
Hershey Junior College, Hershey, A. G. Breidenstein, Dean
Immaculata College, Immaculata, Anastasi Maria
Juniata College, Huntingdon
Lafayette College, Easton, William M. Smith
LaSalle College, Philadelphia, The Rev. Brother G. Joseph
Lebanon Valley College, Annville, S. O. Grimm
Lehigh University, Bethlehem, George B. Curtis
Marywood College, Scranton, Sister M. Theodosia
Mercyhurst College, Erie, Sister Mary Alice Weber
Messiah Bible College (junior college), Grantham, A. W. Climenhaga, Dean and Registrar
Moravian College, Bethlehem, Dale H. Gramley, Asst. to Pres.
Moravian College for Women, Bethlehem, Arthur S. Cooley
Pennsylvania College for Women, Pittsburgh, M. Helen Marks, Acting Registrar
Pennsylvania Military College, Chester, Franklin G. Williams
The Pennsylvania State College, State College, William S. Hoffman
Philadelphia College of Osteopathy, Philadelphia, Floyd L. Kefford
Philadelphia College of Pharmacy and Science, Philadelphia, John E. Kramer
Rosemont College, Rosemont, Mother Mary St. Stephen

St. Francis College, Loretto, The Rev. Severinus J. Carroll, T.O.R.
Scranton-Keystone Junior College, LaPlume, Blake Tewksbury
Seton Hill College, Greensburg, Sister M. Eucharia O'Hagan
State Teachers College, Indiana, Mary L. Esch
Susquehanna University, Selinsgrove, Mrs. Helen Ulrich, Secretary of Admissions
Swarthmore College, Swarthmore, Harold E. B. Speight, Dean of Men
Temple University, Philadelphia, John M. Rhoads
Thiel College, Greenville, H. G. Gebert
University of Pennsylvania, Philadelphia, H. Sherman Oberly, Director of Admissions
University of Pittsburgh, Pittsburgh, J. G. Quick
Ursinus College, Collegeville, The Rev. Franklin I. Sheeder
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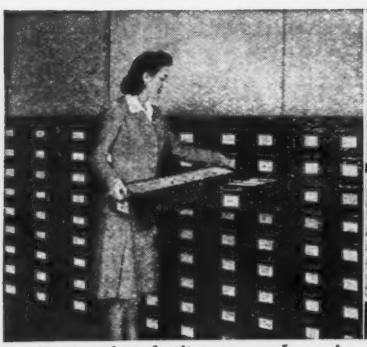

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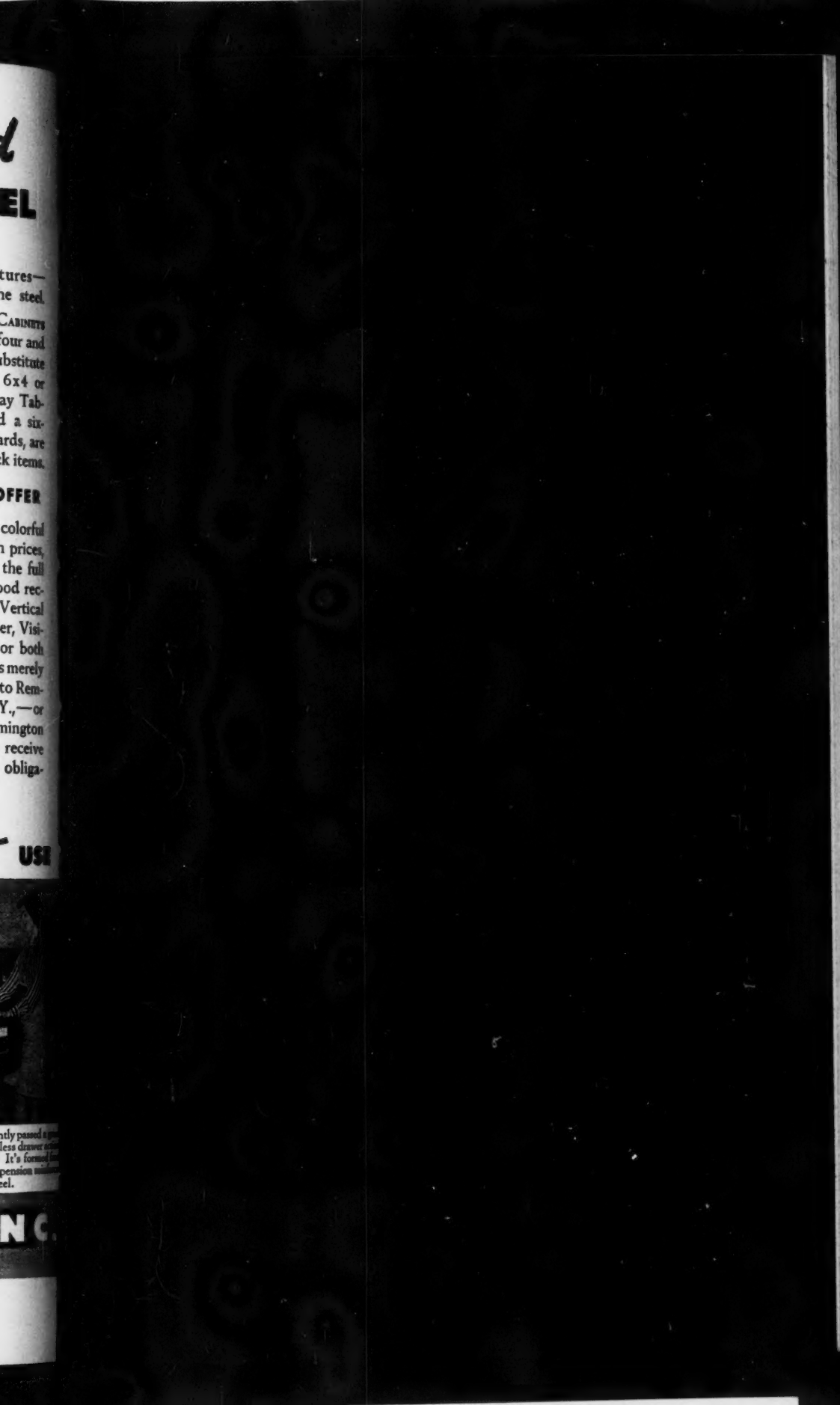
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